THE CULTIVATOR.

THIRD] TO IMPROVE THE SOIL AND THE MIND. [SERIES.

VOL. XI. ALBANY, N. Y., NOVEMBER, 1863. No. 11.

THE CULTIVATOR FOR 1864.

Cash Premiums for Subscriptions!

In approaching the conclusion of another year, we have to record—amidst all the burden of our national war—a remarkable degree of prosperity in every industrial pursuit, and that our Agriculture, not less than our trade and manufactures, is thriving perhaps more vigorously than ever before. It may be doubted whether our Farmers, at any former time, have had so much money in their possession, or have been so free from debt; nearly all sales are made for cash or its equivalent, losses are diminished, and, although the prices of purchased materials are enhanced, and taxation is increased, the larger revenues of the year have still netted a better return than usual to the cultivators of the soil.

It is, therefore, with renewed confidence that we ask the attention of the Friends of THE CULTIVATOR to its Terms for 1864. In the closing volume we think the pledge of a year ago has been fully redeemed—that no difficulties of the times should interfere with the excellence of its mechanical execution, and no discussion of public or political affairs—important as they are—should divert its aim from the practical improvement of our Agriculture, or lower its standard as a Rural Magazine.

THE CULTIVATOR has thus continued—almost alone in the ranks of the Agricultural press—of the same size, and, up to the present time, at the same price, as in former years, while a very great diminution in the space hitherto occupied by advertisements has actually enabled us—although a source of loss to ourselves—to give in reality a much increased amount of reading matter. The paper on which it is printed has cost during 1863, *fifty per cent.* more than in 1862, and, as we write, a farther advance is probable. We have therefore determined to fix the price of THE CULTIVATOR hereafter at

SIXTY CENTS PER YEAR.

This is a change of very small amount to each subscriber, and one which will only partially meet the additional expenses incurred. But we have not made a larger advance, because we desire at any sacrifice that THE CULTIVATOR should continue to be, as it has been heretofore, the *Cheapest Agricultural Paper of its size in the World*, while EXCELLED BY NONE IN THE VALUE AND VARIETY OF ITS CONTENTS AND THE EXTENT OF ITS CORRESPONDENCE. Taking advantage of its cheapness, we have hoped moreover, that the coming year would witness an increase in its circulation in proportion to the prosperity abounding among our farmers, and it is to such an increase we must look, rather than to this slight enlargement of price, to enable it to pay its way.

The system of clubbing THE CULTIVATOR with the ANNUAL REGISTER OF RURAL AFFAIRS will be continued, as it has proved far more satisfactory to our readers than any other we can adopt. The Annual Register for 1864 is now out, as will be seen from an advertisement on another page of this number, and will be found fully as attractive and useful as the preceding issues.

The following are therefore the

Terms of the Cultivator for 1864.

ONE COPY OF THE CULTIVATOR..... **60 Cents.**
ONE COPY OF THE CULTIVATOR AND REGISTER..... **85 do.**
TEN COPIES OF THE CULTIVATOR AND REGISTER..... **$6.00**

Premiums:

1. For Ten Copies of THE CULTIVATOR and REGISTER, accompanied by the cash ($6 00)—**one extra copy of both to the Agent.**
2. For Fifty Copies of THE CULTIVATOR and REGISTER, accompanied by the cash ($30) we will pay a **Cash Premium of Five Dollars.**
3. For the Largest Number of Subscribers for THE CULTIVATOR and REGISTER received from any one person up to the 1st day of March next, accompanied by the cash at 60 cents each, **a Cash Premium of Twenty-Five Dollars.**
4. For the 2d Largest Number of Subscribers received as above, a cash premium of **Twenty Dollars.**
5. For the 3d Largest Number of Subscribers, as above, a cash premium of **Fifteen Dollars.**
6. For the 4th Largest Number of Subscribers, as above, a cash premium of **Ten Dollars.**

*** This List may be somewhat enlarged hereafter, should we be enabled to do so advantageously.

*** THE CASH PREMIUMS offered in the above List, it will be understood are **in lieu of any extra copies of the paper.** Those not receiving a cash prize, will be entitled to a Premium Copy of THE CULTIVATOR and REGISTER for every Ten Subscriptions accompanied by the cash, at 60 cents each.

Those competing for premiums will be careful to *number the subscribers* they send in, thus—1, 2, 3, and so on, so that additions to the list from time to time may show at a glance the number reached. This prevents any misapprehension, and, unless it is done, we cannot be responsible for any failure to credit competing subscriptions to the proper party.

TO CANADA SUBSCRIBERS.—Subscribers in Canada who remit in Bills of their own Specie-paying banks, will be supplied at the above prices—the premium on these bills enabling us to prepay American postage. If remittances are made in American bank notes, or, from New Brunswick and Nova Scotia, in the bank notes of those provinces, our terms will be as follows: One copy CULTIVATOR, Seventy Cents—Ten copies CULTIVATOR and REGISTER, (including an eleventh or free copy as above,) $7.00—in order to enable us to prepay the American postage under the present regulations of the Department.

OUR PROSPECTUS for 1864 will be ready soon, and will be sent to all applying for it, together with sample copies as may be desired. Those early in the field will succeed in making up the largest lists.

THE ANNUAL REGISTER can be sent to subscribers for for 1864 as fast as they are received, and those desiring a copy for use in canvassing can remit 25 cents for it, and deduct this amount when they send payment for the club. A simple exhibition of this valuable book with its scores of neat and instructive illustrations, will often secure a subscription.

LUTHER TUCKER & SON,
Albany, N. Y.

NEW-YORK STATE FAIR.*

Horse Pitchforks.

The demand for Horse Forks for unloading hay is steadily increasing. Farmers are becoming satisfied that hay can be unloaded more expeditiously and with far less labor and expense, by the use of a good horse fork, than by hand; and our inventors and manufacturers are not slow to supply the demand. We have already a dozen or so different patent horse forks—Gladding's, Beardsley's, Palmer's, &c. The latter manufactured by Wheeler, Melick & Co., of Albany, received the first prize at the State Fair last year. Some improvements have since then, been added to it, and it is unquestionably a valuable fork. A new candidate for public favor was on the grounds this year—invented by Squire Raymond, of Genoa, Cayuga county, N. Y. It hooks up the hay in a manner somewhat similar to that of Beardsley's, and we should think could be operated with less manual labor than the fork machines.

The Horse and Hand Lever Hay Press, manufactured by L. & P. K. Dederick, of Albany, was on the ground, and attracted much attention. The practice of pressing hay is becoming more general as its advantages are better understood.

The Messrs. Dederick also exhibited a new apparatus for hoisting heavy articles by horse power, which has many things to recommend it.

Cultivators, Plows, Harrows, &c.

We noticed little that was new in this department, but there were many excellent cultivators and plows on the ground. Remington & Co., of Ilion, N. Y. had a splendid assortment. Their steel plows are yearly attracting more attention, and their horse-hoes and cultivators are everything that could be desired. For heavy soils, their "Johnston Cultivator" must prove a very efficient implement.

A. B. Travis, of Brandon, Mich., exhibited a *wheat hoe*, with an attachment for planting corn, beans, &c., that has some valuable features. There can be no doubt that hoeing wheat in the spring would prove very beneficial, and we are assured that this implement will do the work expeditiously and well, at a cost of not more than twenty-five cents per acre. This implement is patented, but Mr. Travis authorizes us to say that any farmer may make one for his own use without charge. Mr. Travis also exhibited a *revolving landside plow.*

A concentric harrow was exhibited by Moses Sheldon, Calias, Vt., which we think will prove valuable. It is circular in form, and most of the teeth are less than ten inches apart, but so arranged that when the harrow is drawn forward, the teeth cut the ground every two and a half inches. An *iron harrow*, manufactured by Jacob Delong, of Covert, Seneca county, N. Y., has some valuable features. It can be drawn from either end, and is thus, to a certain extent, self-sharpening. The teeth are easily fastened in the iron frame, and as the points wear off they can be driven deeper with little trouble.

There are few agricultural implements which have received so little attention as the harrow, and we are glad our inventors and manufacturers are attempting its improvement. Byron Rice of West Schuyler, showed a harrow so constructed that the teeth could be thrown out of the ground without lifting the frame, so as to allow it to pass large stones, stumps, &c. Of the merits of this, and also of a revolving harrow invented by Mr. Colby of Clarence, N. H., we cannot judge without seeing them in operation. The latter was exhibited by Van Brocklin and Aland of Rome, N. Y., who also showed their "Union" plows of different sizes. The mold-board of these plows is of the most approved form, and we have no doubt they will run easily and do excellent work. A plow with a movable beam that can be adjusted for two or three horses, was shown by Pitts and Brayley of Rochester, N. Y.

* Continued from page 309.

Improved Fences.

Specimens were fewer of portable and other fences shown than usual of late years. Mr. Vandemark of Phelps, Ontario Co., and H. P. Ross of Caughdenoy, Oswego Co., each exhibited specimens of portable fences. A new candidate for public favor was shown by Mr. Geo. Van Auken of Phelps, Ontario Co., N. Y. It is simply an ordinary post and board fence attached to stones sunk in the ground. A hole is drilled through the stone pillars, and the upright wooden posts are screwed on to them. A firmer fence we have seldom seen. The great objection to ordinary post and board fences, is that the posts in the ground soon decay. Mr. Van Auken's invention entirely obviates this difficulty; and we are assured that the expense is, in most sections, but little if any more than with wooden posts.

Dairy Hall.

Utica is the center of the great cheese district of the State, and as was to be be expected, there was an excellent display of cheese. It is somewhat remarkable however, that one of the very best samples of old cheese we tasted, was from the *wheat*, rather than from the dairy districts of the State. It was sixteen months old, and the cheese weighed not more than twenty-five pounds; but for richness and flavor we have rarely eaten anything superior. It was made by Theron Van Auken of Phelps, Ontario county, N. Y. Another splendid old cheese was made by John C. Hardy of Watertown, N. Y.

There was a fine show of "factory cheese." L. Tanner of Marcy, Oneida county, exhibited twelve cheeses of different sizes, running from 10 pounds up to 1,050 pounds! G. E. Morse of Eaton, E. R. Hobson of Cold Creek, H. Farrington and many others, exhibited some splendid factory cheese. Such cheese as one of Mr. Farrington's that we tasted, would soon put up the quotation of American cheese in London, to a par with the best Cheshire or Gloucester. We have never eaten a Cheshire cheese that was superior to it, and few that were its equal. On the other hand, some of the cheese on exhibition had that flavor of decomposed whey, which so much injures the reputation of American cheese in England.

There was a fine show of butter, but we have not space to particularize. There can be no doubt that our farmers are making great and rapid advancement in the art of cheese and butter making. J. H.

BELGIUM possesses an order of merit for industrial and agricultural laborers. The decoration worn by the members has just been modified by royal decree, and now consists of a medal bearing an emblematical figure representing manufactures or agriculture, as the case may be, upon a black enamel ground, surrounded with a red border. The design is enclosed within a fillet, on which are inscribed the words "Skill; morality." Around the whole is a wreath of laurel in blue enamel for artisans, and green for agriculturists, surmounted by the arms of the country, suspended to a royal crown. The decoration is suspended to a ribbon of the national colors.

DISCUSSIONS AT THE N. Y. STATE FAIR.

[Reported for the COUNTRY GENTLEMAN.]

Second Evening---Rotation of Crops.

SUBJECT.—*The best rotation of crops suited to the climatic conditions of the middle tier of counties in the State, on farms having at least eighty acres of good arable land.*

J. J. Thomas and Hon. T. C. Peters, were announced to open the discussion, but the former gentleman was not able to be present, and the latter said he had received no notice of his appointment, and was consequently unprepared to do the subject justice. He regretted this the more, as these discussions were very generally read by the farmers of the country. He found it difficult to determine what we are to understand as the middle section of the State.

President Conger remarked that it was not intended to confine the discussion to the best system of rotation in the middle tier of counties, but to the *climatic* conditions of the middle section of the State.

Mr. Peters was still left in a dilemma. The climate in the central counties of the State varied considerably. Pompey Hill, in Onondaga county, was from 1000 to 1200 feet above tide water, while the general level of the middle counties was not more than 400 feet. Now as 350 feet altitude are equal to 1° north, the temperature of Pompey Hill would be as cold as that of Montreal. Portions of the central counties were well adapted to wheat growing, while others constituted the best butter and cheese districts of the State. The system of rotation adapted to a wheat farm, would not suit a dairy farm. On a dairy farm the great object was to get grass; and he thought that dairy farmers, the best of them, were paying more attention to making manure and applying it judiciously, than the wheat growing farmers. Wheat growers, from the quantity of straw they have, can make more manure than the dairy farmers—but he would not say that they could do it more profitably. The dairy farmers in this State have less competition than the grain growers. Neither New-England nor the West, can successfully compete with them. The best butter on the Continent is made in the dairy districts of this State. In some sections of the dairy districts cheese is generally made, while in others farmers confine themselves to butter. Does not know the reason. Perhaps it was because the climate of the butter districts was not adapted to grain growing, while that of the cheese districts enabled the farmers to grow more grain to feed to their cows. He could not say, but perhaps it required more grain to make cheese than to make butter. Would like to hear from Col. Pratt on the subject.

Col. Pratt could not answer the question. He did not make cheese. Keeps 50 cows and makes nothing but butter. He supposed the reason was because he understood butter making, but did not understand the cheese business. The business a man understands he should stick to. He has seen no better corn this year than his own. He makes 500 or 600 cords of manure every year. He puts it into a heap, and pours the liquid from his pig pens over it. Applies it in the spring, and plows or harrows it in. If left on the surface and allowed to dry up, it is of little use. Horse dung dropped on the road and allowed to dry, is of no value. Thinks highly of white clover for cows, also for bees.

Mr. ——— of Vienna, did not know why farmers were so reluctant to speak on this subject. Agriculture was an honorable pursuit, and it ought to be a pleasure to talk about it. He formerly lived in Lewis county. The only object of breaking up land there was to reseed it and get better grass. Grass was what they wanted. When they break up a piece of land they plant corn, then sow rye, and seed it down. Some seed down, where he now lives, with green corn. But he thought if they would seed down without any other crop, they would have better grass. Farmers should sow more kinds of grass—some earlier and some later. Thought, too, we might soil our cows to advantage.

L. H. Tucker—How much seed per acre, and what kinds do you sow?

Mr. ———, red-top, one-third, and two-thirds timothy and red clover. Sandy soil better for clover; moist land better for red-top. If grass seed is sown without any other crop, the grass gets well rooted before winter, and is not liable to be winter-killed; and the next year you have a big crop. The only object of plowing in his section, is to get more grass.

The President hoped gentlemen would confine their remarks as much as possible to the subject.

Hon. Geo. Geddes of Onondaga Co., said they had a great diversity of soil and climate in his county. In the town of Camillus they could raise better tobacco than in Kentucky, while Pompey Hill grows rich in making cheese. Farmers would adopt that system of rotation which was best adapted to their particular location. He did not want a Herkimer county man to tell him how to grow wheat, and he, Mr. Geddes, was sure he could not tell a Herkimer county man how to make cheese.

Mr. Walker of Oswego Co., said in his district they cultivate land merely to get grass. If a field runs out, they break it up and plant corn, and then seed down again with rye. They plow merely to get in manure and reseed.

Mr. Sanford of Oswego, thought this question of rotation was a very important one—and he thought it would be well if the *principles* on which a rotation of crops is based were better understood. It was very well for gentlemen to come here and state facts—but a fact in itself was of no use to him, unless it could be classified and some general principle deduced from it. On a wheat farm, the question with the farmer was how frequently he could raise wheat—how the exhaustion of the soil, caused by the removal of a crop of wheat, could best and most speedily be restored. In the dairy districts grass is the object, and the question then was, how to increase it. Is it better to top-dress, or to break up, manure, and reseed?

Rev. Mr. Loomis of Cayuga Co., thought one of the most important questions for the farmers of this State, was in what way and with what products could we best compete with the West. He thought we should have least to fear in cheese and butter-making, and in raising fruit. Mr. Loomis mentioned an interesting fact: He top-dressed an old meadow—that would not produce over three-quarters of a ton per acre—with *straw*, and it increased the crop of hay to two tons per acre. He top-dresses his meadows, and also his pastures, with straw, and it has an excellent effect.

Hon. Geo. Geddes of Onondaga, said his rotation was pasture, plowed in the spring and planted to corn; then oats; next wheat, seeded down in the fall—at the time of sowing the wheat—with six quarts of timothy seed per acre, and six or eight pounds of clover seed in the spring. Formerly he allowed his grass land to lie two or three

years, but now, on account of the cut-worm, he only let it lie one year.

Third Evening---Manures.

The subject for discussion on Thursday evening, was *the best method of husbanding and applying manure.*

Solon Robinson thought that the best way was not to husband it at all. He would draw it out as fast as it was made.

Mr. Van Alstyne of Columbia county, agreed with Mr. Robinson. He would apply it on the surface. Nature was a safe guide, and she spreads manure on the surface.

Hon. Geo. Geddes did not think nature a safe guide. We were at war with nature. He believed in top-dressing, but thought the fact that trees deposited their leaves on the surface was no proof that it was best to apply manure the same way.

Sol. Walrath of St. Lawrence county, had practiced top-dressing for twenty years. But he liked to have the manure well-rotted before using it. Composting manure added 25 per cent. to its value. He thought it also killed the seeds of weeds—and in the dairy districts weeds were a great nuisance. On many farms half the hay is weeds. White daisies form two-thirds of the production of much grass land. He would pile his manure in heaps and turn it two or three times to kill the seeds of weeds. Would apply it on grass or spring crops. If to the latter, would cultivate it in.

Hon. T. C. Peters would like to hear from some Long Island farmers as to their method of using manures. He found that the yield of wheat on Long Island was eight bushels per acre higher than the average in the State.

Mr. Cox of Long Island, was called out, and said they purchased stable manure in New-York. It cost them $3 per load on the farm. They apply twelve loads per acre. This gives them twenty bushels of wheat per acre. The wheat does not pay for the manure, but after the wheat they get two or three heavy crops of hay which brings a good price. Some farmers manure for corn on sod land. They draw out the manure in the winter and spread it on the land, and plow it under in the spring. At the time of planting they also apply some well rotted manure in the hill, to give the corn a good start till it can reach the manure and sod plowed under. Others manure for potatoes, and sow wheat after the potatoes are harvested. Some cart sod from the old fences and place it in the hog-pens and cow-yards to absorb the liquid, and they use muck in the same way when it can be obtained.

Prof. Nash thought one reason why the Long Island farmers showed so well in our agricultural statistics, was because some of them were wise men, and some of them were not as wise. Immense quantities of leached ashes were brought from Western New-York. Some farmers use 1,500, 2,000, 2,500 bushels per annum. They are wise. The ashes do good. Fish, too, can be purchased at a cheap rate, and they are extensively used as manure. He had said some were *unwise.* Perhaps the remark needed qualifying. To illustrate what he meant, he would say there were many *fancy* farmers on Long Island; men who had made large fortunes in the city. They raise large crops regardless of expense. A good lady sometime since was bantering with her husband about the expense of his farm. "Every man must have some pleasure," he said. "My farm does not cost me over $3,000 a year, and it affords me more enjoyment than I can get for the money in any of the fashionable amusements of the city." The Professor knew a man of this character who has a farm of sixty acres on Long Island, and he make it produce more than six hundred acres of the same land produced a few years ago. The crops are raised at a loss, but they help to swell the general average. As a general rule, however, the farmers on Long Island are very successful. They pay great attention to composting everything that will make manure, and keep up the fertility of the soil.

Hon. Geo. Geddes remarked that the Long Island farmers sell everything they raise. They even sell their straw, and consequently they are obliged to buy manure, even if it costs $36 an acre to raise twenty bushels of wheat. Farmers in Onondaga Co. are wise enough not to sell manure in the form of straw and hay. He knows some who raise several hundred bushels of grain, and cut one hundred tons of hay a year, who do not sell a particle of it. It is consumed on the farm and the manure keeps up the fertility of the soil. Taking into consideration the amount of produce raised, and the little that is sold off the farm, he thought the farmers of Western New-York manured their land more highly than those of Long Island. There was more fertilizing matter in a good clover sod than in any twelve loads of manure you could purchase in New-York. He had a field that had never had a shovelful of manure applied to it for sixty-five years, and by growing clover and pasturing it with sheep, &c., it gets richer instead of poorer. Every farm should be self-sustaining. We cannot afford to draw manure a mile. In regard to husbanding manures he had little instruction to give. Had seen excellent effects from applying manure on grass lands in the fall, intended for corn. The corn was a foot higher and of a darker color. He thought that in the fall was the time to apply manure; but the question was how to keep the winter made manure through the summer without loss. He had thrown it into piles under sheds, but it fire-fanged.

Joseph Harris thought that in the wheat growing districts, where there is an abundance of straw, manure could be kept through the summer without loss. There is far greater loss from leaching than from evaporation. The yard should have a concave bottom, and the horse and sheep manure, which ferment rapidly, should be mixed with the sluggish cow and hog manure. This, with plenty of straw, and the heap properly compressed by allowing animals to tread upon it, would check injurious fermentation. And if the building was spouted so as to carry off the water that falls on the roof, he thought the manure would absorb all the rain that fell on the surface of the barnyard. But as more rain fell at some seasons than at others, it would be well to have a tank at one corner of the yard for the liquid to drain into. This should be saturated with plaster and pumped back on to the manure in dry weather. Sulphate of lime or plaster *in solution*, will *fix* ammonia, and he felt confident that if this course were adopted there would be no loss in keeping manure during the summer.

Wool Growing in Michigan.—In this State rapid progress has been made in wool-growing. In 1840 the product was but 150,000 pounds; in 1862 it was 5,915,192 pounds, which assigns Michigan the fourth position among the loyal States. The clip for 1863 will be between *nine and ten millions of pounds;* this at an average of 55 cents for nine million pounds will amount to $4,950,000.

THE UTICA DISCUSSIONS.

The Application of Mineral Manures.

Hon. A. B. Conger has prepared the following, as a summary of the first evening's discussions at the Utica State Fair; but, as the course of the discussions was so rambling, we think it might perhaps better be styled a condensed statement of the views of the chairman, as elicited by the remarks of those who took part in the debate:—

1. The most *essential* elements of the food of all plants found in their ash after combustion, and therefore styled "mineral food," are phosphoric, sulphuric and silicic acids in their several combinations with potash, soda, lime, magnesia and iron, and chlorine in its combination with the second of these bases, in the form of common salt.

2. As the presence of each one of these elements in a *soluble* form (that is so that each may in due proportion be easily appropriated by every plant) is an indispensable condition of a *fertile* soil, it may happen under an exhaustive process of cropping or an inefficient system of tillage, that one or more of these elements, though existing in the soil, are no longer in a state of sufficient solubility; or that from the foregoing causes or from the natural condition of the soil are wanting; or their relative proportion disturbed by the presence of some elements in excess.

3. Whenever any crop fails to reach a full maturity the attention of the farmer should be at once directed to a careful study or chemical analysis not only of his surface soil but of his subsoil. If both are deficient in any of the above elements there is no remedy but to apply them directly to the surface.

4. Where the subsoil contains all the mineral sources of food, it is to be made of easy access to the fine branches of the roots of plants, by very thorough plowing and deep subsoiling, and their power to permeate the subsoil in search of the food needed, may be partly estimated by some facts revealed in botanic studies, to wit, that the roots of rape have been found over five feet in length, those of clover over six, and those of lucerne over thirty, while the fibres of turnips (Swedish) diverging from the root stock are very numerous, and in common with most *cultivated* plants, will strike deep into pliable subsoil *when* the top fibres of the roots have in a porous surface soil received their necessary food and their proper care, as for instance, when rye plants, six weeks after sowing having leaves only five inches long, had produced roots two feet in length, soon to be followed by the stooling of eleven shoots with roots three to four feet in length.

5. As the turnip or clover crop reaches maturity, the elements of food circulating throughout the entire plant are gradually concentrated in the bulk of the root, and the former, after feeding to stock and returned in the shape of barnyard manures; or the latter if plowed in, bring to the surface soil those elements of mineral food which the deep stretching fibres of the roots have gathered from the subsoil.

6. Careful experiments have shown that manures in which the nitrogenous and mineral elements are properly blended, produce the greatest returns from a given area of cultivated soil, while if the former is separately used, the ash residuum shows that it has secured to the plant a larger proportion of the latter and vice-versa.

7. As barnyard manure, carefully husbanded from animals properly fed and cared for, contains not only all the nitrogenous but the mineral food of the plants fed to them and not appropriated in the formation of flesh and bone, &c., it is clear that it is the most economical source of mineral as well as nitrogenous food to plants, provided always that it is made on the farm in sufficient quantities and the expense of its application both as to the distance to which, and the time which it is to be carted, is kept within reasonable limits.

8. But as the larger efficiency of barnyard manure lies in the evolution of its nitrogenous elements, and in obedience to the law observed in the 6th section tends to the appropriation from the soil by the plant of its mineral food, it is evidently desirable to resort to the use of the mineral manures, especially when experience has shown that if judiciously applied, they produce a larger crop than if not so applied, whether in combination with barnyard manures or not.

9. Artificial manures are too expensive for their profitable employment by the farmer, and economy of expenditure demands the selection of those found on the farm or obtained by in-expensive processes.

Thus common salt (one of the mineral elements of the food of plants as above mentioned) in its application of from 12 to 20 bushels per acre (especially if the latter amount is applied in the fall) will produce large crops of clover, turnips and mangolds. Its use in a saturated solution in hot water at the rate of 8 lbs. to 100 lbs. of Bare's or Jarvis Island Guano, will render 8 per cent. of the phosphoric acid in combination with the lime in those guanoes soluble, that is, place so much phosphoric acid in a condition to be at once taken up by the plant. Its power then as a *solvent* of the phosphate of lime existing in the soil, cannot be denied, and its application in combination with plaster (sulphuric acid and lime) and ashes makes the cheapest possible top-dressing for grasses and grain—*except in cases* where the phosphate of lime is deficient in the soil.

10. Common ashes are the most easily recognized form of potash. Where not attained in sufficient quantities on the farm, their place may be measurably supplied by muck dug from swamps, obtained from the bottom of ponds, &c., and mixed in layers with stone lime sufficiently broken up, and in the proportion of about one bushel of the latter to four or five of the former, by which process not only the seeds long buried in the muck are deprived of their power of vegetation, but the humic and ulmic acids in the muck are made, through their combination with the lime, to play an important part in the economy of vegetation.

11. Lime is best applied in the form of gypsum, and thus yielding the element of sulphuric acid should rarely be applied in the caustic form, or even when this last has been partially de-oxydized by water, unless on lands abounding in *vegetable matters*, as in the case of swamps or wet lands newly drained.

In its combination with phosphoric acid it is most valuable in stimulating the growth of clover and turnips, the best precursors of grain crops. Bones, pulverized and treated with salt as above, or *decomposed in compost heaps* of alternate layers of good soil or muck, with a like sprinkling of salt as above, under circumstances which secure a due development of heat, will always be the cheapest form of phosphate, unless the relative market prices of bones and American guanoes, containing 60 to 70 per cent of phosphoric acid may make the latter cheaper.

12. The economical method then to be pursued by the farmer is dependent upon the selection in the first instance of the mineral manures best adapted to the wants of his farm, and the crop he seeks to ensure; upon its distribution throughout a soil thoroughly pulverized and its retention for the use of the upper branches of the roots in connection with his barnyard manures, likewise applied and distributed; upon a system of deepening, opening, and rendering friable his sub-soil and giving the roots of all cultivated plants the easiest as well as farthereest range for the mineral food they best appropriate; in short, upon the employment of all the methods suggested in the question, but in every instance he is to select his mineral manures, and adapt his tillage and rotation so as to make each crop (the influence of the seasons being a fair average,) a profitable return upon his expenditure, labor and investment.

Pistillate and Staminate Strawberries.

A late number of *Hovey's Magazine*, notices Dr. LINDLEY's remarks on W. R. PRINCE's article on the strawberry, and quotes the Doctor's remarks, as follows:

"Is it true that some plants of the American strawberry are absolutely female? Is it true that those females are far more productive than our hermaphrodites? If so, the fact is worth knowing, and we venture to ask the following question: Can any of our readers on this side of the Atlantic confirm these statements? If they can we shall be only too happy to publish their replies."

Hovey adds:—

"This proves that the English botanists know nothing of the sexuality of our American strawberries, which every intelligent cultivator in America well knows."

We make these quotations for the purpose of suggesting some inquiries. We never specially admired Dr. Lindley, neither on account of his opinions nor courtesies, (although quite superior to some American editors on the latter point,) yet it is perhaps justice to say that speaking as a botanist, he is not wholly in the wrong. A scientific person, who had never examined the strawberry plant, would suppose on hearing the common language of strawberry growers, that it is strictly diœcious—or in other words, that some plants or varieties, bear pistils only, and others both pistils and stamens. An examination of the flowers would prove that he was mistaken, and that what are termed pistillate plants, are abundantly supplied with stamens also—but that these stamens are so small and imperfectly developed, as to be incapable of supplying a proper amount of pollen to the stigmas. If, for example, the flower of the Hovey's Seedling be examined with a microscope, the stamens will be found to be small and short, as shown at *a*, fig. 1, and the imperfect anthers which they bear, on being pressed or broken open on a slip of glass, will be found to afford very little pollen—quite insufficient, usually, to fertilize the flower. Compare these organs with the same in the flowers of the Large Early Scarlet, fig. 2. The pistils, *b*, will be found the same in both, but the stamens in the Scarlet will be seen large and well developed, and on being broken, will emit an abundance of pollen. There are other varieties, such for example, as the Dundee, which have intermediate stamens, and furnish a smaller supply of pollen than the Scarlet, yet still sufficient to cause abundant bearing. The half abortive stamens of the Hovey are, commonly, quite insufficient for fertilization; but in some localities, and under peculiar circumstances, the anthers appear to have furnished pollen enough for this purpose. The question arises, do these few pistillate sorts of European origin, which bear better in this country when fertilized, than when planted alone, require the same fertilization in their native localities? Or do the altered circumstances of soil, climate and treatment, effect an improvement of the imperfect anthers, sufficient to supersede entirely the use of fertilizers?

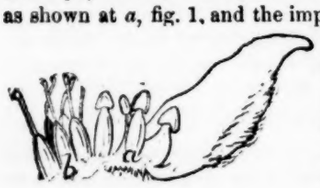


Fig. 1.

Fig. 2.

It appears from the same article copied above, in speaking of the size of some new strawberries, that fifteen of Boyden's Seedling, and ten of Austin's Seedling, each weighed a pound; that is, the Boyden weighed a little over an ounce, and the Austin an ounce and a half each, as an average.

VISIT TO SEVERAL VINEYARDS.

MESSRS. L. TUCKER & SON—The following, from a valued correspondent, seems too good to be lost:

"I have been on a tour among Grapes and Vineyards. At ——, in N. J., I saw a vineyard of 10 acres, chiefly Isabella—a failure from rot. The leaves were greatly injured by mildew. The soil a sandy loam, more sand than loam, on a somewhat adhesive subsoil. The location flat and exposed. An experiment had been tried in covering a small portion with a glass roof, the sides completely open. Under this the foilage was perfect, the fruit good; which was confirmatory of my convictions of mildew.

"At —— in New York, I saw a fine collection of grapes, all more or less mildewed except those descended from the Vitis cordifolia (the Clinton race) which was also in accordance with previous observations. The Delaware is held in great estimation here, and its conduct warrants it. On a place near by was an acre in Delaware plants suffering a good deal from mildew and a little, but very little, rot,—the crop very good but most of the main leaves destroyed which must injure the crop somewhat. On a steep slope a few miles above and surrounded (except on the south-east) by dense woods, I saw a splendid vineyard, about 5 acres in extent, of Catawbas. The soil seemed a free, gravelly loam; and there was very little mildew although the proprietor assured me he never had any rot before. These vines looked grand and had a famous crop. I tasted some pure Catawba juice two years old; found it very fine indeed.

"At Dr. ——'s I spent a very pleasant day. He has 50 acres in Catawba and Isabella, mostly the latter. His Catawbas have suffered some from rot, mostly on the flat ground. His main planting is on south-east slopes—his crops good. I noticed he allowed his vines to run without much pinching of the young wood, even allowing them to festoon from trellis to trellis. The one great trouble with all seemed to be getting trellises high enough for the vines to extend and ramify. The low dwarf mode adopted in Europe will not suit our American grapes—they must have room.

"The Doctor makes a great deal of wine—and must have several thousand gallons in his cellar. He mixes the Catawba and Isabella. I tasted several vintages and they were all good. He adds sugar, nothing else and not much of that, only enough to make them agreeable to American tastes as he says. He puts entire faith in these two grapes and will hear of nothing else for extensive plantations. His soil is a gravelly loam, some 20 feet deep, with perhaps 2 or 3 per cent of organic matter.

"The Concord has rotted in many places.

"As to the Maxatawney grape, my experience does not yet warrant a decided opinion, but all I would say would be decidedly in its favor. It is now (Sept. 12th) about fit to eat here, while the Isabella is sour as vinegar. It is as good for table use as Delaware—but you should be cautious with new things. The Creveling I have faith in—will see more of it soon. White grapes, as a general rule, are not as saleable in market as black; why I know not, but it is a fact.

"The best trellis for native vines, I find a general sub.

ject of anxiety among grape growers. American grapes will not submit to the close dwarfing mode of European culturists. I have long had a notion that the best mode would be the same I have seen in some cold graperies, based on the fact that the best and earliest fruit is always found on strong, young canes of the previous years growth. The Thomery mode is in my opinion a humbug here. I mean to have some trellises put up for trial, allowing the uprights to run some feet above the horizontals—the former to be used for the top shoots—of which I would have one selected out of three distinct and separate ones from each root; fruiting only young upright shoots and cutting an old cane yearly from each vine. As to the principle it is clear as day—but its practicability must yet be determined."

From the above several things are to be learned—that in the past very trying season as it has proved for the grape in certain localities East, no variety has been entirely healthy—that the old favorite varieties are by no means discarded, flourishing as they do on certain soils and locations; and that existing modes of pruning and trellising are not deemed perfect by all good growers.

Bloomington, Ill., Sept. 16, 1863. F. K. PHOENIX.

Proper Depth of Covering for Seed Wheat.

In walking through a wheatfield I find once in a while a bunch as large round as a half bushel basket, which is of a ranker growth and darker color than that around it. *There* is something which plants like, and I wish to know what it is.—*D. D., in Sept. No. Cultivator.*

I have also observed in wheatfields, stools of wheat far better than surrounding ones, and in examining fields I find sometimes a single kernel of wheat producing but one stalk, and that a feeble one. At other times two or three stalks from one kernel, and occasionally fifteen, and sometimes more will be found. In view of these facts a man may well exclaim, "There is something which plants like, and I wish to know what it is."

For several years I have made as extended observations as my time and circumstances would permit, and have extended my observations to as many different fields as were accessible, and I have always found that the kernel producing but one stalk was deposited *deep in the soil*, while the stools containing several stalks and the "bunches as large round as a bushel basket," proceeded from kernels which were but slightly covered. From these facts I conclude that whatever partialities plants may have in other respects, they do certainly "like" air and light.

In Gray's Botanical Text-Book, paragraph 113, it is stated that "the budding end" of the embryo plant, "invariably rises upwards, as if it sought the air and light; the root end turns constantly from the light, and buries itself in the dark and moist earth." From this first manifestation of an inherent property, "it insures that each part of the plant shall be developed in the medium in which it is designed to live and act—the *root in the earth*, and the *stem and leaves in the air.*"

That portion of the wheat plant *above* the crown is *stem*, below the kernel, is *root.*

If the kernel is planted three inches deep, there are then nearly three inches of the stem in the "dark and moist earth," which, according to nature's laws, should be in the air. To what extent this law of nature can be violated without a detriment to the plant, is a question for agriculturists to consider. If Dr. Gray, in the work above quoted, has correctly stated the laws governing the vegetable kingdom, it is evident to my mind, at least, that wheat should receive but a shallow covering of earth.

May not the disparity in the growth of vegetation, in the same field, observed by your correspondent, D. D., be accounted for upon this theory? C. C. DEWEY.

Napoleon, Michigan.

INTRODUCTION OF ITALIAN QUEENS.

The best method that I have practiced for preparing a colony of the common variety of bees to *kindly* receive an Italian queen, is, first, to search for and find the queen which is to be supplanted by the Italian, and cage her—the black queen—at once, and immediately replace her in the midst of the colony where she is to remain during four or five days, by which time all of the eggs in the hive will have so far advanced as to be unsusceptible of producing queens. If this be done expertly, the bees will not make any attempt to rear another queen in her stead. Now remove the cage and queen from the hive, and introduce the Italian queen alone, either in the same or in another cage; allowing the caged queen to remain in the midst of the colony one or more days, at which time she may safely be allowed to pass in among the bees. It should be borne in mind that the newly introduced queen should have a supply of honey in her cage.

This mode is adapted to all kinds of hives, and peculiarly adapted to hives without frames. The way to proceed with such hives, is to "force" or drive out the bees into an empty box or hive. Now spread a large cloth, or place a wide board on the ground, upon which another empty box or hive should be placed with one side raised from the cloth or board, so as to allow the bees to enter and pass up into it. Then hold the hive containing the bees over the cloth, a little distance from the empty hive, and shake out a portion of the forced bees upon the cloth. Now look for the queen while the bees make for the empty hive. If she is not found the first time trying, repeat the experiment by setting down the hive from which the bees have been shaken—after they are all out—and shaking them from the one they have just entered. This should be repeated until the queen is found, when the bees should be allowed to return into the hive from which they were forced.

As it has been ascertained from *actual trial* that the Italian bees are decidedly superior, compared with the black or common kinds, especially in cold climates, it is important that bee-keepers should understand these manipulations of transferring queens.

The writer recently sent for and received an Italian queen from the extensive apiary of Rev. Mr. Langstroth & Son,—who advertise in the COUNTRY GENTLEMAN,—which queen surpasses in beauty and fine color anything that I have yet seen, not excepting those that have been imported. Mr. Langstroth, from a laudable enthusiasm, and being pre-eminently skillful as an *apiarian*, has succeeded in breeding those Italian bees up to a high degree of purity. The queen was so extraordinary fine that I have transferred her from colony to colony several times, allowing her to remain only a few days in each colony; after she has been taken out of the hive, the workers rear themselves another from eggs laid by the fine queen. C. J. ROBINSON.

TURNIPY TASTE IN MILK.

The unpleasant taste given to milk and butter when the cows are fed upon turnips, is effectually corrected by the use of a little common nitre, (or saltpetre,) but the common mode of using this preventive is not the best. It has been usual to put a lump of saltpetre into the milk-pail, but it sometimes happens that the nitre remains undissolved, and the milk retains the objectionable flavor. Instead of this, make a strong solution of saltpetre—say a pint of boiling water upon an ounce of saltpetre; when thoroughly dissolved, put it in a bottle and stand in a cool place. Before milking, put into the milk-pail a spoonful of this solution, or more, according to the quantity of milk expected, and all turnip flavor will be entirely destroyed. It also in a great degree destroys the bad flavor given to butter by the yellow crowsfoot or butter-cup. This has been tried in our family, and found serviceable.

RUSTICUS.

KITCHEN GARDENS.

The present is a suitable time of the year for making preparation of ground for the kitchen garden to be planted next spring. There is no part of the farmer's possessions that would yield a better profit, so far as economy is concerned, nor a finer supply of luxuries to those who think well of the comforts of living, than a perfectly managed kitchen garden. A great mistake is made by many farmers in supposing that economy consists in expending the fewest number of hours in working and managing this important part of their possessions. Hence it is not very uncommon to see gardens, which, during the early part of the season, or soon after planting, gave some promise of valuable returns, entirely obscured before the close of summer, with pig-weeds, fox-tail, and other rampant intruders of the kind. The conclusion reached by the owner was that raising garden vegetables did'nt pay, and still less attention was accordingly given to them the next year.

Others do somewhat better; they keep their gardens clean, but, unfortunately, their vegetables are much shaded by cherry, pear, and plum trees, and neither heavy crops nor fine products are obtained.

The only way to raise vegetables to the best advantage is to devote a piece of ground specially to this purpose; and to allow nothing else to grow upon it, neither fruit trees, grass, nor weeds. This ground should be prepared in the most perfect manner, and to this end the best spot should be selected. If near the dwelling, it will, of course, be most convenient of access; but it is better to spend a minute or two daily in walking ten or twenty rods after supplies, if they can be had several days earlier and of much finer quality.

In preparing the ground, the first and an indispensable requisite, is perfect underdrainage. The ground may appear dry enough on the surface, but if on digging down two feet, water is found to settle in the bottom of the hole at a wet time, or in the spring of the year, the whole ground of this needs thorough under-draining. The drains should be at least twice as near each other as for common farming purposes, or they should be laid regularly not more than one rod apart. Those who esteem very early crops, will find this of great importance, for the soil will become warm in spring two or three weeks sooner than if filled with a surplus of cold water, which has to be slowly evaporated, carrying off a great deal of heat in the process. Manure is of little use if kept under water, and the best growth can only be secured by a warm, mellow soil, through which the air can pass.

Depth of soil is essential. Fine, well grown roots cannot be raised in a shallow bed of earth with hardpan close beneath; and considerable depth is requisite for holding what would otherwise be a surplus of water in the form of natural moisture, to be furnished to roots during times of drouth. The depth should not be less than eighteen inches. For common farmers trenching by hand will be too expensive, but may be performed equally well by horse-labor, as no trees are to grow upon this land, but its whole energies given to the raising of vegetables. First plow as deep as practicable with a common plow, running the subsoil plow in the bottom of the furrow. This will not be deep enough the first time, and it may be necessary to repeat it two or three times, in order that the whole may be perfectly loosened up. Unless the subsoil is quite sterile, it will be best next to throw up the whole, or a large part, by means of trench plowing. At the same time, as much fine manure as can be thoroughly worked in, should be applied before each plowing, whether it be with the common plow, the sub-soiler, or the trench plow. By applying a moderate quantity at each time it will become more perfectly intermixed than if a single heavy dressing is given, and this end will be still further facilitated by harrowing the manure before plowing in.

A garden prepared in this manner, will produce vegetables that will soon repay all the trouble.

But an indispensable requisite is yet to come. The cultivation must be *perfect*—no weeds must ever be allowed to grow—the surface of the soil must be constantly mellow. Will this involve "too much labor, trouble, and expense?" This brings us to the last point which we here urge, namely, *cultivation by horse labor.* We have been too much in the practice of adopting the European mode, where hand-labor is cheap and horses dear, of doing all by the spade, hoe, and rake. This will do for town gardens, but is not adapted to the necessities of farmers.

We have spoken of the ground as being exclusively appropriated to a kitchen garden, and free from all trees. It may be oblong in shape, so that the drills may extend across it the longer way, to obviate the frequent turning of the horse. But whether so or not, all that is necessary is to have a smooth, vacant strip of land at each end for the horse to turn upon. Let every thing practicable be planted in drills—coarse plants, such as cabbages, potatoes, &c., in single drills; smaller, as beets, turnips, and parsnips, in double drills; and still smaller, as salsify, lettuce, and onions, in triple drills. It will be found by experience, that the room thus given to these smaller plants, and the semi-weekly dressing which they may receive without much expense, will make them grow beyond any common treatment. Small plants, of short duration, as radishes, may, if desired, be placed in a separate bed. If the garden contains only half an acre, it will require only two hours to cultivate it thoroughly with a horse—or four hours each week, or two days per month.

"But a great deal of hoeing will be needed, besides the horse cultivation, will it not?"

No—not if our directions are attended to at first, in relation to allowing the seeds of weeds to infest the soil. The ground, when first prepared, is plowed and re-plowed, and harrowed and re-harrowed. This treatment, if continued for some time, will clear out all foul stuff. Then keep it out, by never allowing a single weed to be seen. Weeds multiply by the thousand fold—it is therefore cheapest to keep the soil *perfectly* free from them. The great error which most commit, is in *nearly* clearing the ground, and then stopping. The owner kills ten thousand or a million weeds, as the case may be, and leaves a thin dozen remaining. This neglected dozen multiplies a thousand fold, and produces a ten thousand. Be particular then, to kill the last dozen, and the last single weed. If nine hundred and ninety-nine may be destroyed, why not the single thousandth? It is easy enough if only attended to—and after the soil is once clean, the hoe is scarcely ever needed. The horse will do ten times as much useful labor in the same time.

If farmers will only adopt this mode of raising vegetables, and *carry it out perfectly* in all its parts; faithfully cultivate twice a week, and never allow the first weed to be seen,—they will be astonished at the small cost of abundant and constant supplies of the finest and most delicious garden products all through the season. But any half-way efforts will be failures.

ORCHRAD GRASS

MESSRS. EDITORS—In a recent number of the Co. GENT., under head of "Inquiries and Answers," a correspondent wants information in regard to orchard grass, as to its value for hay or pasture. With great deference I must dissent from some of your positions in the answer. I have had great experience in this style of grass, and have gained it at some cost. Its value for pasturage is on account of its coming on early in the spring, and remaining green late in the fall. For hay it is worthless, which will be soon seen. When allowed to ripen the stalks grow very large and coarse, and in spite of early cutting will be quite woody. In fact if the grass is cut when quite green, comparatively speaking, the dried stalks will resemble timothy hay that was cut when dead ripe. Cattle will refuse to eat it, when other hay can be got. It is like feeding so much splinters. The chief objection to the grass is that it has a tendency to grow in large clumps, leaving large spaces of ground entirely bare. Thick seeding will not remedy this for more than the first season. The quality of the soil makes no difference. It is impossible to make an even sward. I have plowed orchard grass sod when there would be great bunches of it two feet in diameter. If your correspondent desires a grass that will "smother" his daises, he must sow some kind different from the orchard grass. The best smotherer he can get is the plow, if his land is overrun with daisies. If there are considerable quantities of them, but not enough to destroy the value of the hay, the best plan is to pull the weeds before they mature. Several years ago my meadows were infested with what we call the "white top" weed. When they had grown large enough to rise above the grass, I had them all pulled up by hand. Continuing the practice each year, there are none to be seen now. It requires really but little time or labor to accomplish it. After the first year of pulling, but few weeds will come up. After a rain is the best time for this work. If your correspondent is wise, he will let orchard grass alone; if not wise, he will probably learn wisdom to his cost.

Jefferson Co., Ky. G.

CORN AFTER BUCKWHEAT AGAIN.

As your correspondents have answered so well the inquiry for the cause of ill success in growing corn as a succeeding crop to buckwheat, it may seem hardly needful that the subject should be further discussed; but as I think that the whole ground has not been covered by their answers, and that too little attention is paid to buckwheat as a farm crop, I offer a few words on the subject.

It has been abundantly shown by your correspondents, that, generally, we cannot succeed in growing a good crop of "corn after buckwheat," but many were unable to assign a cause. In an interesting article on this subject, the writer said, "I would not recommend any one to plant corn immediately after buckwheat; you need not ask me why, for I cannot tell you." This writer has shown us that he has grown a good crop of buckwheat on the same land for about thirty years in succession without manure, and therefore very reasonably concludes that it is not a very exhausting crop. It is well known that corn requires a dry and warm as well as rich soil; and the universally admitted superiority of inverted green-sward for this crop, goes to show that as every furrow of such sward-land forms an underdrain during the forepart of the season, while we have heavy cold rains, and while the springs are high, that land on which buckwheat has been grown the previous year, from its cold compact condition, is not well suited to the growth of corn, especially in the forepart of the season.

The luxuriant growth and heavy foliage of buckwheat so effectually smothers all other vegetation, and as it admits and even requires that the land should be cultivated so late in the heat of summer, that everything in the soil becomes so effectually decomposed as to render the land for the succeeding crop so compact as not only to retain, but also to bring to the surface, by capillary attraction, so much water as to render the land more impervious to heat and air than the most tenacious soil, and therefore not adapted to the growth of corn.

As a succession crop, buckwheat has no equal. It may be sown after early varieties of winter wheat and winter barley, or where either of these crops have winter-killed, and may be sown so late that it may be positively known whether or not the *winter-killed* crop will pay. It may be profitably grown, also, after early peas, and on land where turnips, from drouth or other cause, have failed to grow; and where the land is not very dry, it may be sown after an early crop of hay has been mown. It has been said that the chinch-bug, which is so injurious to the wheat crop in the West, will not injure wheat that succeeds a crop of buckwheat.

An acre of buckwheat is worth to a bee-keeper who keeps but a half-dozen swarms, as many dollars additional profit.

Very generally buckwheat has been doomed to grow on what (at the time of sowing and planting spring crops,) might be called a frog-pond—among the clods of the valley, and on hill-tops too poor to grow good white beans or decent mulleins. I. I. *East Shelby, N. Y.*

BARN-YARD MANURE.

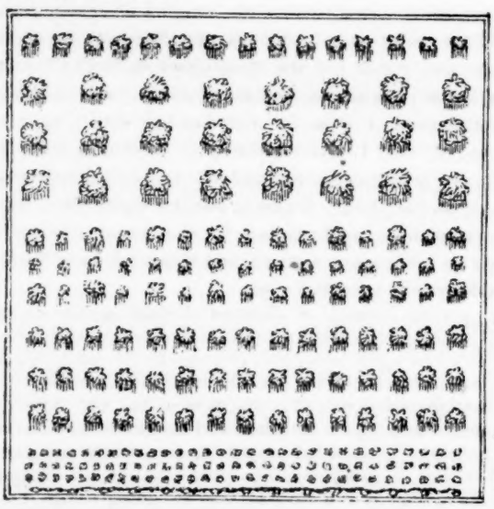
EDITORS CO. GENT.—Having been a constant reader of your journal for some time past, during which interval I have been much benefitted by the many and valuable articles I have read on all subjects pertaining to Agriculture, and seeing that you are at all times willing to insert in your paper information that may benefit your readers, I offer this as an excuse for encroaching with a simple statement of what I have witnessed on a friend's farm in New-Jersey, or rather his method of *composting manures* produced on his place. There is not the care given this subject that there ought to be; for the manure heap to the farmer, is his reserve guard, and if this fail in fulfilling its duties, he must fail also.

The general practice of farmers throughout the country, of pitching the manure from their stables and cow-sheds, into the open barn-yard, exposed to the rains, which wash more or less of its soluble inorganic constituents away, besides subjecting it to the rays of the sun, causing an immense loss by evaporation, and also allowing the organic gases, carbonic acid, ammonia, etc., which are generated during decomposition or fermentation, to escape, is a most negligent and careless way of doing things, and opposed to all true economy, for he loses the most valuable part of his manures. Near my friend's barn is a long shed, constructed of common boards. The manure from the stable and cow-sheds is removed to this shed every morning. When five or six inches in thickness, a layer of pond mud or muck is added to the mass. This prevents the escape of any gases that may be liberated during decomposition, by absorbing and retaining them. The whole heap consists of alternate layers of barn-yard manure and pond mud. The stalls are so constructed that the liquid drainage passes into a deep recess made on purpose, along side of the manure heap, and from there it is thrown over the compost once and sometimes twice a week. In case the liquids from the stable and sheds are insufficient, the requisite quantity is added from a large cistern near the shed. The liquid prevents all fire-fanging or burning of the manure, causing the labor of forking over to be entirely dispensed with; this alone is quite an item saved. During my visit in the spring, I had a chance to witness the appearance of the manure, as it was carted out from the shed, and it looked to me more like rotten cheese than barn-yard manure. Every particle seemed to have thoroughly rotted, and not a vestige of straw could be discerned in the entire heap.

Staten Island. E. C. F

LAYING OUT A FRUIT GARDEN.

In consequence of several inquiries how to lay out a fruit garden so as to secure the most perfect as well as economical horse cultivation, we are induced to give the accompanying plan, suggesting, however, some modifications according to circumstances. A chief reason why so many of the fruit trees which have been planted in this country have failed to produce satisfactory results, or have perished in the hardening process, is the want of provision for inexpensive culture. Many trees are set out where they cannot be well cultivated except by the tiresome and costly process of hand spading. They are either entirely neglected, or else small circles are dug up at the foot of the stem, which do little good, as the great mass of the roots have extended far beyond these circles in every direction. These stunted trees bear very little fruit, and very poor at that; and the owner wisely concludes that Mr. Blank, the nurseryman, has sent him a miserable lot of trees, which bear nothing but small, scabby, half-flavored specimens. Had these trees received the same attention that has been given to the cheaper plantation of corn and cabbages, the conclusion would have been, "what splendid trees Mr. Blank has furnished me! such large crops of beautiful, juicy and delicious fruit, and only five years since the trees was set out! I advise you all to buy trees of Mr. Blank."



1. Plums—2. Cherries—3. Early apples—4. Standard and dwarf pears —5. Peaches — 6. Raspberries — 7. Gooseberries — 8. Currants—9. Grapes.

But to the plan. It is represented as square in the figure, but it may be oblong if more convenient—the rows being cultivated both ways, the time expended in turning the horse about the shorter way, will be compensated by the less frequent turning the longer way. Although the trees are of different sizes, and planted at different distances, it will be seen that they run in straight rows in both directions, and admit of cross cultivation—thus saving much hand labor. In the plan about an acre is intended to be included—the size to vary to suit the wishes of the owner. This acre will contain 132 trees, besides the raspberries, gooseberries currants and grapes. It will be seen that the first row is plums—the side of a square acre being 209 feet, there are 15 trees in the row, each 13 feet apart, and occupying a strip of ground 20 feet wide. A light hurdle fence may be placed between the plums and cherries for a few weeks during the curculio season, so that pigs and poultry may be turned in under these trees for the destruction of this insect. There is no locality, however abundant this insect may be, and however uniformly barren the trees as a consequence, where a combination of the jarring process with this pig and poultry remedy, *if both are thoroughly carried out*, will not produce constant and heavy crops. The great mistake generally made is doing the work by the halves—not turning in animals enough, nor following up the jarring process closely, without a single intermission as long as an insect is found. It often happens that both cherries and early apples are strong where this is the case, and where there are plenty of animals to turn in, the hurdle fence may be placed between the early apples and pears.

The cherry trees are represented as standing 26 feet apart in the row, and each row occupying 20 feet in width. This may seem too great a distance, but it should be remembered that cherries are much less liable to rot when they have plenty of room, so that the air can circulate freely between the trees. It will doubtless be an improvement on this plan to plant dwarf instead of standard cherries, in which case they may be set as thickly as the plums, or 13 feet apart and the rows 15 feet, leaving more space for the pears. There are 16 standard pears represented, and 29 dwarf—the latter occupying intermediate spaces, and yielding to the former when superanuated. This mode of mingling the two sorts is common, and generally approved; but on the whole the best way is to have them separated, for the dwarfs, if well cultivated and pruned, and not allowed to overbear, will last a long time; and while they continue to interefere somewhat with the best growth of the standards, the latter will seriously affect the dwarfs by their taller growth. We are inclined to think another improvement may be made by planting dwarf apples instead of the standard, provided the soil is strong and fertile. If worked on the Doucin stock, they will be healthy, vigorous, and grow large enough to produce valuable crops, as we have proved by several years experience, having trees of six or seven years planting, that bear from two to four bushels annually. If this change is adopted, the single row of eight early apple trees, (shown in the plan,) occupying 25 feet, may give place to two rows containing 30 dwarf trees, and which may comprize both summer and autumn varieties. The three rows of peaches, containing 48 trees, occupy 60 feet, and the trees are 13 feet apart; to prevent them from extending beyond these limits, the heads must be kept pruned in, which may be easily and rapidly done early in spring by the use of pruning shears. Cut off one, two or three years' growth, as may be found best adapted to securing a symmetrical head, sufficiently thin towards the outside to let in the light. This pruning will cause the trees to continue vigorous, and to bear large and excellent fruit, far beyond the ordinary life of a peach tree which is neglected and allowed to bear too many, and small and inferior specimens. A row each is given to raspberries, gooseberries and currants; about 5 feet in width should be occupied by each row, and a part of the raspberry or gooseberry row may give place to the New Rochelle blackberry, which should be summer-pruned and kept snugly within bounds, according to the mode described and figured on page 94 of current volume of Co. Gent.

Strawberries are planted in a separate enclosure, as they would interfere with the perfect cultivation of these trees.

In answer to the two inquiries, "how soon may we expect a good supply of food after the trees are planted, and how many months of the year can we be supplied with

fresh fruit?" we may reply: The gooseberries, currants and raspberries will begin to bear well in two or three years, and sparingly sooner; the dwarf pears will commence bearing in about three years, (they should not be allowed to bear sooner,) and in six or eight years will yield abundant crops. The same remark will apply to the Doucin dwarf apple trees, and dwarf cherries, except that less care is required to prevent overbearing. Peaches and plums, and standard cherries, apples and pears, will vary in their time of bearing with the different sorts, but may be relied upon to yield handsome crops in five to ten years.

The portion of the annual circle which these fruits will fill up is about as follows in the northern States: The earliest cherries will ripen by the middle of June; later sorts for a month or more afterwards. In the meantime currants and raspberries will come in, closely followed by the first plums, and by early apples and pears about the middle of summer. During the latter part of summer and the first half of autumn a large number of varieties of plums, pears, peaches and apples will furnish a profusion; and later varieties of most of these, together with grapes, will extend the supply into winter. It is not intended that winter apples and winter pears should occupy this enclosure, but be raised on larger orchard trees. If the supply of these is large enough, and they are kept in good, neat, clean, dry and cool, and properly ventilated cellars, they will extend the supply until the next strawberry season. The winter pears, however, will need more attention in effecting a perfect growth and maturity than the apples. Native grapes, if the vines have been well pruned and cultivated so as to ripen the bunches perfectly, will keep plump and fresh until spring; but if badly pruned and imperfectly ripened, they will wither if dry, and rot if moist, long before mid-winter. The best keeping native grapes are the Isabella, Rebecca and Clinton.

For the best mode of laying out the ground and planting the trees see the excellent directions with the accompanying figure on page 174 of volume XXI of the COUNTRY GENTLEMAN.

CULTURE OF ROOT CROPS.

I write this paper for the benefit of farmers who have poor farms, and may wish to cultivate root crops. My own farm is high yellow clay land that bakes very much after showers, and underlaid with limestone, with a small part alluvial creek bottom. It had been forty years cultivated in corn and oats, and was pretty much worn out. Desirous to raise some roots, such as parsnips, carrots, sugar beet and Swedish turnip, I began on the creek bottom, never having raised a root before, except in the garden. I I plowed deep, harrowed fine, and proceeded throughout my culture according to the best experience as laid down in agricultural publications. I was much pestered with weeds, and did not raise more than half as many bushels to the acre, as is reported by those more successful than I was.

An accident induced me to try the cultivation of these roots on the upland clay part of my farm. In a spare part of my garden, salsify, parsnip, carrot, beet roots of the largest size, were selected and planted out early in the spring for seed. My practice is to select and take off when ripe, the center umbel for seed, of the parsnip and carrot—the rest of the seed falls to the ground. Late in the fall the carrot seed will come up and stand the winter. Being pressed with work till late in the spring, the piece of ground that had been appropriated to raising the seed, was not plowed up till June, when the gardener who had been directed to plow it, came and told me that it was a pity to plow up such fine roots, for they were larger than those we had planted with care in the spring. Upon inspection and consultation with the gardener, I determined to let the ground remain as it was, covered with volunteer carrots and parsnips. The next winter, many parsnips were dug from this volunteer patch, that measured 5¼ inches across the crown, and had penetrated the ground 18 inches in depth, and all were of good size. They had received but one hoeing in the season of their growth, and that was in July.

This experiment led me to believe that roots could be successfully cultivated on my high clay grounds. Accordingly, I directed one of my servants of "African descent," to plow half an acre with my largest plow and stoutest horses, as deep as he could, and run the subsoil plow after him in each furrow. After he had it thus plowed, rolled and harrowed, and made it in as fine order as he could, I directed him to lay the ground off in furrows two feet apart. If any clods turned up in the furrows, they were beat to pieces. Then I directed him to haul from the manure heap, after beating fine, as much manure as would give a good coating to the furrows—then take his plow and turn the ground on each side of the furrows over on the manured furrow; then with the roller the furrow was smoothed down, marked off, and planted about an inch deep. After the seed was covered, each furrow was covered over with rough manure from the stable yard, about four inches thick. This rough manure keeps the ground in fine condition during the winter, protects the seed, and imparts all its qualities to the ground. Early in the spring the rough manure is raked off between the furrows—the seed springs up early and keeps ahead of all weeds with a little attention, and the cultivation is greatly lessened. The after culture is to be done with the cultivator between the furrows.

The great advantage of sowing the seed in the fall, is its early vegetation in the spring.

I am also of the opinion that roots raised on high ground keep better through the winter, are more saccharized, and afford more nourishment to stock, than those raised on rich alluvial soil. All observing farmers are aware of the great changes that take place in the growth of corn. According to the experiments of Dr. Salisbury with corn, from the 30th August to 18th October, sugar increases from 3.67 to 13.32. Starch from 1.04 to 56.30. Water decreases from 90.80 to 8.45. This analysis teaches a valuable practical lesson. It shows that during cultivation nine-tenths of the plant and grain are water. So in rich alluvial soils, more water is taken up by roots, and less time is allowed in the fall to saccharize and mature them, and hence the largest amount of nutritive matter is evolved in the upland dry clay soil.

I am also so strongly convinced of the value of volunteer parsnips as food for hogs, that I intend to plow and pulverize well two acres, and sow broadcast, which will afford them good picking, or rather rooting, next winter.

I am satisfied that all my stock prefer parsnips to all other roots, and that it affords more nourisment than any other. J. C. J. *Belmont, Harden Co., Ky.*

☞ It is stated that farmers in the south of England are talking about feeding their cattle on wheat, because it is cheaper than anything else. Oilcake is £11 per ton, while wheat is only £9 per ton.

MANAGEMENT OF MANURES.

Messrs. Editors—After receiving and reading this evening, an earnest invitation to attend a political meeting, and the account of the arrest, by Gen. Bragg, of Bishop Polk, because he did not attack Rosecrans three hours earlier on Sunday morning than he did, and also reading the soothing letter of Bishop Hopkins in reply to the protest of Bishop Potter of Pa., and forty of his clergy, to the letter of Bishop Hopkins written in 1861, I took up the Country Gentleman, and soon found myself interested in the much more rational and profitable discussions at the New-York State Fair, on "the best mode of husbanding and applying manure."

For what it is worth, I determined to give you my experience upon the same subject. Some years ago I found it convenient, as I hauled hay from the field to the barn in July, to take out return loads of manure, (well-rotted clover chaff,) and apply immediately as a top-dressing. I never saw a more instantaneous, striking or durable effect from any application of manure I ever made. In the summer of 1862 I repeated the experiment from my horse stables, but to my disappointment there was no verdant after-math as in the first application, nor was there any corresponding improvement in the hay crop of the present year. The failure of the after-math I attributed to a drier autumn; but the failure of an improved hay crop the past season, can be attributed to no want of moisture, for a wetter winter and spring we have seldom had.

The spring and early summer being frequently too wet to plow, I employed my teams in hauling manure composed of stable, barnyard and roadside scrapings, (the latter being almost mire when got up and thrown into heaps,) into an unplowed and well-sodded field intended for wheat fallow for the present autumn seeding, and deposited in layers in a large heap about five feet high. In this heap during the summer, I buried a dead horse, a dead sheep, and two or three dead hogs. To-day I am cutting down and carting out this heap of manure to be harrowed in with my wheat, and a more fatty, unctuous mass I never saw—apparently far superior to any stable or barnyard manure I ever before used.

I have now in course of preparation for another experiment in top dressing grass-land, a compost heap composed of some eighteen or twenty head of Government beef-cattle, intended for the army of the Potomac, buried in a mass of old wheat straw and chaff, and covered with earth. A neighbor has about forty buried in a fallow field. These cattle herded near me and partly on my premises, and died suddenly at the rate of ten or a dozen a day, during the hot weather towards the close of the month of August, from some unknown disease, but supposed to be the bloody murrain. A number of men who assisted in skinning and disposing of them were seriously poisoned, their hands, arms and faces being much swollen and inflamed for some time, and a number of hogs died from eating the flesh of these dead cattle. Out of a drove of fifteen hundred, nearly one hundred died in a very few days.

There, you have my chapter on "the best mode of husbanding and applying manure." A Maryland Farmer.

What Kind of Clover to Sow.—A writer in the Rural New-Yorker, gives the following opinion:—"In answer to an inquiry, let me say that I would sow the medium for hay, pasture, or for plowing in. It starts earlier in the spring, and grows rapidly, consequently you have a larger growth to turn under early. For hay it is far better, for you can get your crop of hay and a crop of clover seed the same season, and some pasture after it; and for pasture alone it will produce more feed throughout the season. I have raised both the large and medium more or less for the last thirty years; have grown them side by side in the same field, and prefer the medium—I sow no other."

THE WHITE WILLOW FOR FENCING.

It has become a well settled axiom, that all new discoveries in agriculture require time to adopt them into general use. It has required nearly twenty years to learn how, (that is for the farmer in general,) to make a fence of the osage orange, and even now more than half the attempts are failures. Because thousands of farmers fail to grow fruit, is that any reason why no fruit should be grown?

In no one thing have our farmers made less progress than in cheap and durable fences. In a country where timber is plenty, the old Virginia fence is yet the most popular, and to this day our groves bear testimony to the wasteful uses of the timber for this kind of enclosure. There is no part of the west where the farmers can afford to use up their timber in so wasteful a manner. The post and board fence is less objectionable, only because it requires less of the raw material. Live fences must take the place of dead ones as a general thing, not only for their cheapness but for the effect they will have on the climate and in the production of better crops.

For a substantial hedge the osage orange stands at the head of the list, but this plant will only thrive on well drained land. It is therefore of importance that we seek some other tree that will adapt itself to our great variety of soils and situations. Thus far the white willow gives promise of being the most valuable for this purpose. It is at home in the woodland swamp, in the prairie slough, and on the high rolling land where alone can grow the osage. On the very dry land its growth is not so rapid as in the low land, yet it is no less hardy. Cuttings, put down early in the spring, in all kinds of soil, will grow and need not fail. The tree does not sucker, but can be easily trained into a good fence. To know how to do this, is of no small importance. There is a general impression among people that willow cuttings, cut at any season after the leaves have fallen, will grow if set at almost any time in the spring, but this is not the case.

The demand for live fences is greater than at any former period, and if osage plants could be had, millions of them would be set out the next season. It is not probable that any great amount of seed of the osage can be had before the spring of 1865, and it will be another year before the plants will be ready to set, and then they can only be used on dry land. In two years the willow will have a good start, and in three to four years more make a good fence. Aside from the fence the willow has other values—shelter from high winds, and in the division of estates and changing of fences which is so often occurring, the willow fence is very valuable for the number of cords of wood that it will furnish. It is one of those improvements that is steadily adding to its own value.

We look upon the discovery that some of our forest trees are adapted to the making of live fences as a new era in agricultural progress, that will make rural pursuits more a pleasure, and certainly add to their profits. The heavy drain on the farmers' resources constantly made by our system of dead fences is the great drawback to other improvements, and one of telling effect against the prairies and from which there has thus far been no escape, but we trust that this old man of the sea will be thrown off or exchanged for lesser burdens.

We must have shelter from the prairie winds, not only for orcharding, but for our field crops, and to accomplish this we must plant belts of timber in addition to our fences; we must use some material that will answer for both purposes. These elements have all been demonstrated by the white willow in an eminent degree. It is then a loss of time to wait for the end of the war to grow the osage.

We would not have our people lose sight of the osage, by any means, for along roadside, the garden and orchard, that need protection from pigs, boys and poaching men, it is of great value, and cannot well be dispensed with.

Preparation for the Fence.—It is necessary to success that the place intended to set the plants should be fitted during the autumn. A strip at least a rod in width should be plowed deeply, by either trench plowing or sub-

soiling. If but a narrow strip is plowed, it is too apt to dry out, and kill the plants, as young willow plants cannot stand a drouth to good advantage. This season we have seen them die after attaining two feet, and large numbers at six to ten inches. The ground should therefore be prepared to the depth of a foot, be thoroughly harrowed and rolled, so as to leave it in fine tilth. We need not tell the farmer that to grow a cutting the soil must be finely comminuted, yet it will do to oft remind him of the fact, as it is too often overlooked in the preparation of the soil for this purpose. It must be borne in mind that the preparation of the soil must be completed in autumn, as it is not to be disturbed in the spring on no account, for so soon as the frost is out sufficiently to thrust down the cutting in the soft soil, it must be done. If you delay until the soil is settled, the work cannot be so well or so easily done. The willow is the first tree to put out its vernal growth; and to give it a good start must have the advantage of the moisture of the soil. If this is attended to, and the soil in good order, the plant will become so well established that no subsequent drouth can do more than to check its growth.

The Cuttings.—These can be taken off from the fall of the leaf until the time for setting, but not at any time you choose within this period, for when the wood is frozen the work of cutting must be suspended. We have no doubt that a large share of the loss of cuttings the past season came of cutting when the wood was frozen. The bark in spots turns black, and the vigor of the cutting is lost. All orchardists and nurserymen know the bad effect of pruning when the wood is frozen in winter, and need not be more surprised at the failure of cuttings than at the failure of scions cut in a frozen state. We think this point has been entirely overlooked during the past season. We have no doubt that the very best time to take off the cuttings is late in the winter, on warm days; when taken off at this time, if exposed to some extent, so as to become considerably shrivelled, they will recover and make a vigorous growth, but if cut in a frosted state, as we said before, they turn black in spots, and the cutting after throwing out feeble roots, yields to the first adverse condition of the soil.

Size and Age of Cuttings.—Two years old wood is the best, and should be used on all occasions of setting in grass land, but cuttings of all sizes can be made to grow if carefully attended to, as before directed, though we would recommend that none less than the third of an inch in diameter be used in the fence row, and an inch is still better. We have always advised our readers to sort out their cuttings, making two or three sizes, and to set each size by itself, so that their plants will make a uniform growth; the large cuttings, being the most vigorous, we need not say they are the most valuable.

Now that good cuttings can be had at reasonable rates, we would not take the tips as a gift.

Cuttings from the East.—During the past winter we saw numerous samples of willow cuttings from the east, but few of them were the genuine white willow. One of our neighbors purchased eighty dollars worth of a lot from the *powder district* of Pennsylvania, not one of which is genuine. That there is genuine white willow at the East we are well aware, but the temptation to send out all sorts of willow cuttings last winter was too great to be withstood, and hence many of our dealers were imposed upon. As most of the cuttings are dead, little has been done aside from the loss of money and time.

Distance Apart.—We still adhere to a foot as the proper distance to set the cuttings, and these in a single line requiring five thousand and three hundred to the mile.

Protection.—All farm animals will browse the willow, and the consequence is that the young fence must be protected from stock for at least three years, when if the growth is good the plants will be out of the way, and the trimming of the lower branches will do no harm. Osage must be protected in like manner for some length of time.

The Cost Per Mile.

Five thousand three hundred cuttings, $6 per M.....	$33.00
Preparing land,.....	5.00
Setting,.....	2.00
Cultivating and hoeing,.....	7.00
Cutting back second year,.....	2.00
Cultivating second year,.....	3.00
	$51.00

This makes the cost 16 cents a rod, with cuttings at $6, the present price of cuttings of half inch and upwards, 10 to 12 inches long. The best of the cuttings from the fence thus cut back will do to set new fence, and the saving in making another mile the second spring will be reduced to less than 8 cents the rod. When we take into consideration that a fence can be grown in five or six years at so small a cost, it is the worst of economy to put it off to another year.

Cost of Osage.

Eleven thousand plants, $6 per thousand,.....	$66.00
Culture same as willow,.....	19.00
Total,.....	$85.00

At a cost of 27 cents a rod. But this is upon the hypothesis that the land is all well drained. In ordinary hedges we see no need of cutting back either the willow or the osage, but both can be thus treated at about the same cost, though the willow will not require cutting more than once in two years, and if the cuttings are of any value, this will be in its favor.

The more we examine into the value of the willow fence the more are we in its favor, of which we intend to show living facts.

Hedges are sometimes cut down on the division of estates, and the changing of the boundary of a field; in that case our willow fence will be worth one or two dollars a rod beyond the cost of removal, while the osage will be of no value, and will cost largely for its destruction.

We cannot close this already long article without urging the necessity of planting of live fences, as the first dogma in the creed to profitable farming. We have much more to say in regard to timber planting for fuel and other farm uses, but must forbear at this time.—M. L. Dunlap, *Editor Illinois Farmer.*

Durability of Timber.—The piles sustaining the London bridge have been driven 500 years. In 1345 they were critically examined, and found to have been decayed but slightly; these piles are principally of elm. Old Savory Place, in the city of London, is sustained on piles driven 650 years ago; they consist of oak, elm, beach and chestnut, and are perfectly sound. The bridge built by the Emperor Trajan over the Danube, affords a striking example of the durability of timber in the wet state. One of these piles was taken up and found to be petrified to the depth of three-quarters of an inch, and the rest of the wood had undergone no change, though it had been driven 1,600 years.

Killing Wasps.—Wasps are not so plentiful this season as might have been expected from the mildness and dryness of the weather. I have to-day destroyed three colonies in the following manner: Having discovered the entrance to the nests in the ground, I took about half a pint of tar in a ladle and poured part of it in the hole, and the remainder round about the orifice of the hole. This was done in the forenoon. All the wasps that were in the nest were caught in their attempt to come out, and those that were out were caught in their attempt to get in, so that none of them have escaped.—Probatum est. [This is no doubt the most effectual mode of dealing with those which build under ground. In Scotland, we have what some say is a distinct species, others that they are the same, which construct very curious and often very beautiful habitations on the branches of trees. Those are best secured by drawing a bag over the nest late in the evening, and tying the mouth of the bag tightly up, severing the nest from the branch and immersing them in water for the night, and next morning shaking them into the fire.]—*Scottish Farmer.*

Amateur Farming in New-Hampshire.

Eds. Co. Gent.—The hard handed farmer of our hills as he goes forth to the somewhat monotonous round of his daily labor, is apt to look with sovereign contempt on the essays of the men of wealth who may have ventured up from Boston, or in from New-York, to try the effects of a few thousands on the soil where he spent his early boyhood. He seems to think the tile drains, the new plows, the mowing machines, the neat fences, the renovated farm house, the fancy barn with costly cellar, the prodigious "fowl house," altogether beyond his reach, and a whistle too dear for him to think of blowing.

This is not entirely wrong, or without plausible grounds. The mere amateur is apt to indulge some impracticable fancies, and to ride very expensive hobbies. Nevertheless his influence in both cases is good. The most hopeless slattern is not without some remains of pride and ambition, sure to be touched by example. The sturdy farmer may sneer and profess warm delight in his own ways, but the tall grass, the luxuriant grain, the noble corn, the serviceable stone walls of his neighbor, silently appeal to his understanding day by day, and will work out some fruits of good in some direction soon.

This train of thought is not new to your readers, for the Co. Gent., so far as I can judge from several years attentive perusal, ever goes in for "grafting the wild olives." It was immediately suggested, however, by a visit to the grounds and farm of William Stark, Esq., situated in Piscataquog, a pleasant suburban village of the city of Manchester, N. H. Mr. Stark having determined to devote some of his ample means to the improvement of that soil which his ancestor, "John of glorious memory," defended with the sword, has recently purchased, in addition to an already extensive domain, a hundred acres lying on the Merrimac, and bounded on the left by the Piscataquog river. The natural capabilities of the spot are equal to any in the most favored regions. Fine expanse of upland and of meadow, heavy growth of old wood and native vines, such as justified the words of Whittier when he sang of "grapes from the vines of Piscataquog."

This hundred acres, sloping toward the sunrise, is to be laid out as a *park*, including preservers for fish and game of all kinds. A bare list of the rare creatures now in the grounds would swell this letter to the size of a tolerable catalogue. The rabbit warren is thoroughly stocked, and among the various specimens are the Madagascar, the English hare, the Honduras or Agoute, and the common rabbit, while a few guinea pigs give zest to the crowd. The woods are full of partridges, and grey, red and striped squirrels, while ring doves and fancy pigeons ruffle and strut in all directions. There are the silver crested and golden crested Hamburg fowls. The Leghorn, the grey Dorking, the Java, African and Seabright bantams, Japan silk fowls, pea fowls, bronze and silver grey turkeys. The artificial streams are frequented by Rouen, Aylesbury and Cayuga and Muscovy ducks. The wild stock is yet more curious and interesting to the lover of natural history, consisting of Canada, Bean, Egyptian and Barnacle geese, wood ducks, Chinese and English ring-necked pheasants, and magnificent white mute swans, whose habitat was formerly on the Thames near London. To render the attractions of the park complete, there are Borneo goats and beautiful spotted deer.

It must not be imagined that Mr. Stark, who unites a poetic taste with a very practical mind, has neglected the useful for the ornamental. His Alderney, Ayreshire and Durham cattle are of the best imported stock, his improved Suffolks, that almost take on fat from "snuffing up the east wind," were purchased of John Giles of Connecticut, and he drives on occasion a span of Black Hawks equal to any family team in the State. He has also some very fine Leicester sheep.

Altogether the arrangement of the grounds, although not yet completed, is beginning to assume a pleasing appearance, and the feathered and furred denizens excel any similar collection in New-England, if not the United States. Visitors are freely admitted at all times, and thus the beauties of the estate contribute to the gratification and instruction of hundreds. I submit the question to the Co. Gent. if it is not wiser to spend money thus, than in the summer amusements of Saratoga? Certainly there is much to be learned and many valuable suggestions to be obtained by a visit to Mr. Stark's farm in Piscataquog. There are some other items in my note book on matters pertaining to the agriculture of this region, which may sometime be written out if this be deemed worthy of publication. F.

Strawberries---Three Best Sorts for Family Use.

As I am a little puzzled about strawberries, please do me the favor to give me a list of the three best sorts for family use, in the order of ripening, early, medium and late, my taste being partial to a mild sub acid, and the Triomphe de Gand being my standard of excellence. At the late meeting of the Fruit Grower's Society of Western New-York, (as reported p. 250 present vol. Cult.,) many horticulturists present differed widely, and they don't seem to have placed the sorts in their order of ripening. We have the Early Scarlet and Hovey's Seedling in our market, but to make them at all palatable, we have to use full as much sugar as berries. M. G. *Washington, D. C.*

We cannot recommend a list with confidence, as the sorts vary with locality and treatment, and individuals differ greatly in their estimates. There is no very early mild flavored sort; the Scarlet and Jenny Lind are the best for very early ripening; the Hooker and Triomphe de Gand will probably suit our correspondent best for later sorts; Burr's New Pine, a rather feeble grower, and discarded by some, possesses an excellent flavor, and is a fine berry. There are a number of new sorts highly recommended, some of which may prove valuable, but they need further trial.

A Word to Dairymen about Lanes.

Eds. Co. Gent.—Show me a farm with 100 acres of land without a lane. It may be fifty rods in length; it may not be more than ten. You may occasionally find a farm without a lane, but very seldom. Four-fifths of the lanes in the State do not answer the purpose for which they were made. They are usually so narrow that they get muddy at all wet times during the year.

I contend that no good dairyman will allow his cows to travel a lane twice a day, where the mud is from one to two feet deep in any place in said lane.

Now the best way to have a dry lane, and one where the cattle cannot hook each other, is to have one eight or ten rods wide. You need not say that it is waste land, for there is not as much waste land in a lane twelve rods wide, as there is in one only three. My lane is ten or twelve rods wide, and it is the best pasture I have for its size. Lanes are generally the richest part of the farm, and should therefore be changed every three or four years. Muddy yards and lanes have more to do with regard to the health of cattle, than most farmers are aware of. If you will keep your cows out of the mud, you will not be bothered with your cows having sore teats, or cow pox, which is the worst kind of sore teat.

Cows will do better if fed only twice a day, and have dry yards and stables, than if fed three times and are obliged to stand in mud six inches deep. Mud is a nuisance, and one that the dairyman should avoid if possible.

RALPH.

HIGH PRICES FOR PRODUCTS.

Many farmers suffer a great deal of anxiety—some of them pass sleepless nights in thinking how they shall obtain the highest market price for their products. Should they happen to sell before the highest figure is reached, or delay selling till prices have gone down again, disappointment and chagrin prove a lasting source of discomfort to them. Between the anxiety beforehand and the fretting afterwards, they are in a great measure unfitted for a close attention to their business, and it may be questioned whether they do not lose ten times as much in other ways than in failing to hit the market exactly. Two adjoining wheat farmers, some years ago, had a surplus of grain to sell. Prices were then high, and farmer A. concluded that if he received $1.75 for his crop he would sell, which he did shortly afterwards. Farmer B. held on to his, and a few weeks later made the exulting remark, "You have sold too soon Mr. A., and I can now get $1.94 for my wheat, and I mean to get $2 yet." "Very well," replied A., "I hope you will. I am quite satisfied with what I received, and think it a good price, and I would not have had the anxiety which you have experienced and the constant inquiries you've had to make, for the additional price which you get. I have had the subject off my mind, and have been actively engaged in other profitable business." Farmer B. kept his wheat for the $2, which it never reached, and the next year, after much further negotiation and some loss by rats, sold his crop for $1.25. Intelligent and experienced men can frequently make shrewd guesses on the future market; but these guesses often prove wide of the mark, as is shown by the heavy losses or failure of long-headed produce dealers. It is impossible either for stock-brokers or tillers of the soil to know when prices have reached the exact summit, and very few are so fortunate as to hit this point. They should not aim at it, but be satisfied to receive fair, remunerative prices. Produce dealers are often ruined by paying rates a good deal below the pinnacle, and farmers should not expect to receive rates as an average which shall break down dealers. We have known some land-owners who "saved at the tap and wasted at the bung," who are very close with their neighbors in adjusting line-fences, and who are noted for crowding their lines a little too far into the highway; yet who would allow all the land thus gained, and twenty times as much besides, to be run over with mulleins, Canada thistles, oxeye daisy, and johnswort—who would banter half a day to save a few cents on a good bargain, and yet allow whole fields to be diminished in product by neglected cultivation, or domestic animals rendered poor and unmarketable by want of diligent management and proper attention.

The best rule, undoubtedly, when prices are low, is not to spend one's whole time in endeavoring to get a little more, but to raise better crops, and make larger profits on home management. The difference between good and bad cultivation is often the difference between a full and half crop; and while our best managers scarcely ever fail of receiving twenty-five or thirty bushels per acre, poor farmers, who trust to luck and hope rather than expect to raise a good crop, will not average half this amount. In other words, they waste a hundred and fifty bushels on every ten acre field, and lose, say, about a thousand dollars on every fifty acres sown. The same difference occurs in the corn crop. We can point to several farmers who do not fail even in unfavorable seasons to raise sixty or seventy bushels per acre, while others, through neglect and nothing else, either in draining, previous manuring, or other preparation, or from a want of cultivation and general management, do not average thirty bushels. They have poor cattle and poor sheep, and do not receive one-half the prices obtained by some of their apparently fortunate neighbors, who have long since discovered that diligence is the mother of good luck. If these thriftless farmers would spend less time in splitting farthings in a bargain, and more in rolling out a rich and abundant harvest, or in raising smooth, heavy, fat animals, instead of raw bones and landpikes, they would find the newly adopted system greatly in their favor.

Every man who gives diligent attention to his business, should be allowed to make fair profits. The produce dealer must be one of these, or his business would cease; and he must, sometimes, obtain heavy gains to compensate for his frequent losses. Farmers should bear this in mind, and not be too eager to obtain the last cent. Those who have thriven and arrived at wealth, have generally done so by all proper attention to their land and crops, which they could control, rather than to the markets, which they could not.

THAT SEVEN ACRES.

Messrs. Editors—When I purchased this place, in the spring of '59, there were seven acres clayey loam, on a rather steep side hill, and nearly in front of my house, which had the appearance of being very poor, and that year produced but 1½ tons of poor hay.

I broke it up that fall—in the spring manured it well before plowing, and sowed it with oats—had a tolerable crop. Plowed (subsoiled it) in the fall, manuring again before plowing in the spring, and planted it with corn and potatoes, which proved to be the best in the county. Plowed it in the fall, and prepared 2¾ acres of it for timothy, which I sowed alone in the spring, without covering, The seed started well, but the weeds gained the mastery. and when I mowed it I expected to have to plow again.

This spring timothy and red clover, about equal, took the land, and on the 30th of June I put into my barn 9½ tons of the best of hay, and on the 27th of August 3 tons more, making 12½ tons from 2¾ acres, in place of 1½ tons from 7 acres.

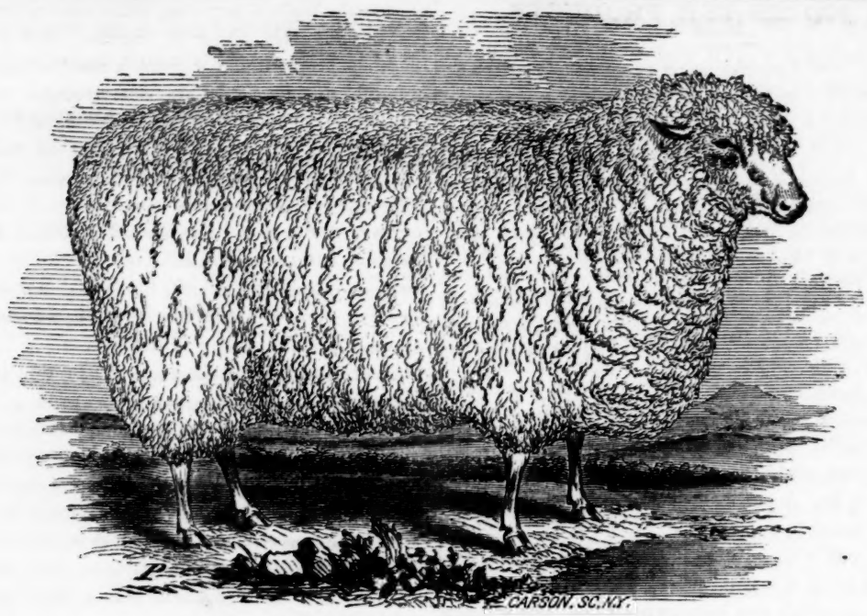
The balance of the 7 acres was planted with choice fruit, and upon it now stands a thrifty orchard of apples and cherries, and a good crop of potatoes and carrots, and next spring I shall seed down this part as the other.

Bright Bank, Ulster Co., Sept., 1863. J. B. S.

Treatment of Cheese when Ready for Market.

When cheese is ready for market and about to be shipped, it is the practice with some Dairymen to apply to each cheese a thin coating of varnish made from gum shellac.

The shellac is simply dissolved and applied with a brush. This coating gives the cheese a smooth, glossy appearance, and, besides adding to its beauty, is said to keep the cheese from losing weight or gathering mould. When cheese, well cured and shipped in the fall, are to remain in store several weeks or months, it is claimed the above treatment is particularly beneficial, as serving to keep them in better condition, with less loss, and at the same time adding so much to their appearance as to induce readier sales than when not so treated. We have never made trial of gum shellac for this purpose in our own dairy, but are assured by some of our best dairymen, that its application has been practiced by them with decided advantage; and as gum shellack used in this way is perfectly harmless, we see no reason why it may not be employed for the purpose indicated, especially as decided advantage is claimed from its use. X. A. Willard.



THE COTSWOLD RAM "PILGRIM."

This ram, of which a good engraving is above presented, was lately purchased by S. M. Fox, Esq., of the Manor House, Livingston, Columbia Co., from the flock of H. G. White, Esq., South Framingham, Mass. He was bred, we believe, by Fred. Wm. Stone, Guelph, C. W.

Sheep Husbandry in Vinginia.

As economy is the order of the day, with your permission I will give you my experience in sheep. I own a good large tract of land in the Blue Ridge, Madison Co., Va. I bought it with a view of raising fine wooled sheep. But I have one tract of about 700 acres, called "Wallace Quarter," which I bought with a view of letting me out to the road, which I propose to offer as a specimen of my tact in economical wool raising, and if you can add anything to it, you will confer a favor to myself, and perhaps others.

The land was bought in 1859 and 1860, at about $6.25 per acre, but as the survey overran, it did not cost quite as much. A fence all around, made and put up out of beautiful chestnut, 12 feet in the clear, and 8 rails high, making a worm fence about 5 feet high, with two cross fences in the same manner, at $1 per hundred, making four fields of about 180 acres each, all opening into the barnyard. Three of these fields are belted, and are native, spontaneous and permanent Blue grass pastures. I give each field one week's grazing and two week's growth. The other field is divided into six shifts, without any cross fence, making 30 acres each. Every year one of these shifts is put in corn, well worked, and with the last working one bushel of rye is plowed in to the acre, after which half a gallon of timothy, half a gallon of clover, and one-fourth pound of ruta baga to the acre, are sown on top of all, which is all done with a one-horse plow called a "ripper," being a kind of shovel plow four inches wide and about one foot long, well put in, and all the implement of husbandry on the place, and a man and boy do all the work except the harvesting. The first thing gathered is the corn; the next the turnips, and the rye makes a fine pasture all winter and until the blue grass is fit to turn on the next spring, when the rye is permitted to grow and be cut in the usual way, and a fine feed it makes for stock in the form of chop feed. This is all the cultivation this field receives, and one shift is treated in like manner annually.

The sheep are of the Spanish and Silesian Merino stock, and were bought of Messrs. Chamberlain of New-York, and Campbell of Vermont, and cost me about $9.00 per head on my farm. They shear a little over seven lbs. in the dirt. There were 800, mostly ewes; sold a good many, and had 1200 left when last heard from.

We never wash, considering it a fruitful and frightful cause of disease. We got, in peace times, 35 to 40 cents in the dirt, (being very good) at Richmond, Va.

Our sheep house forms three sides of 100 feet square frame, 2 stories high, 20 feet wide, and will hold 1,200 sheep and 100 tons of hay conveniently. The southern front consists of a picket fence, 16 feet high, and gateway large enough to admit a four-horse team in the yard, and go out without damage. M. Garrett.

Washington, D. C.

Treatment of Fat Cows before Calving.

In reply to your correspondent "Quebec," who wants to know how to reduce a Short-Horn heifer, to put her in proper condition for calving in December, the heifer having had only grass during the summer, I would say that she is probably not too fat to calve safely. My experience is decidedly in favor of having cows, especially Short-Horns, (and sows too by the way,) in high condition. I never had a mishap. It is natural to Short-Horns to carry flesh when dry, and I should not be afraid of all the fat that grass would put on a growing heifer. At the same time I would use Mr. Bowly's precaution, viz., to give one or two doses of Epsom salts (for quantity see Youatt,) a few weeks before her time expired. If, however, "Quebec" has not faith in this, I would caution him against any violent treatment. Poor pasture is the most severe safe expedient. It is dangerous to try to reduce an animal quickly. I have several heifers coming in in January, that are first quality beef now, and I shall feed them liberally (though not with grain) until they calve, and better afterwards. T. L. Harison.

Morley, Oct. 6.

TWO DAYS IN MASSACHUSETTS.

In no State, perhaps, do the County and Local Agricultural Societies manifest greater activity and prosperity, than in Massachusetts. The statute fixes the limits within which each organization shall act; and, in counties which show a desire and capability of sustaining more than one Society, others have arisen within a few years past, with varying degrees of success, of course, but many of them now awakening as much interest and eliciting as large exhibitions as were drawn out by the Society originally representing the whole county. The days of exhibition are *made more of*, apparently, by the places in which they are held, than is the case even in this State; they are gala days for every body, scarcely, if at all, second to "Fourth of July" in the general estimation. In the neighborhood of all the larger towns, the attention to the growing of fine Fruits, particularly, has advanced so greatly within a few years past, that this department becomes a more important feature than it is here, with some few exceptions; and, as the display of the Horticultural and miscellaneous contributions, (the latter including ladies' work of every sort) is often held in some public Hall immediately accessible to the whole place, very large numbers are drawn out to spend an evening or a day amidst the fruits and flowers, the embroideries and paintings and domestic goods, who might not find it so convenient to visit the open grounds generally occupied by our Societies.

Thus, in the county of Worcester, which is the largest in the State, there are now four Agricultural Societies—the parent, with its head-quarters at Worcester,—Worcester-West, at Barre,—Worcester South east at Milford, and Worcester North, at Fitchburg. At the Show of the last, we were present in pursuance of an engagement, on the 30th of September, and a brief reference to some points of difference between it, and those of our New-York Societies, may not be without interest to our readers. Under its jurisdiction are included twelve or fifteen townships, and the foregoing remarks will apply in a general way to the manner in which the exhibition is conducted. The upper floor of the Town Hall, a handsome and spacious apartment, was occupied by tables filled with orchard and garden and household products or manufactures; while the "common" or open square near by, was taken up for temporary pens, containing the Live Stock exhibited—the latter being thus free to the view of every body. The streets were crowded constantly, and almost to their full capacity, from 7 in the morning to 4 or 5 in the afternoon; and a more orderly, intelligent and well-dressed company of the size, we have never seen together.

There are few of our Societies which devote as much attention, not only to systematizing the programme of their shows, but also to making this programme known. Both are points of much importance, especially when but one day is occupied by an exhibition, and where such a programme contributes vastly to making everything run smoothly and satisfactorily, if it is thoroughly understood and *lived up to*. Tuesday, the 29th, was devoted to the previous arrangements, and to the examination by the Judges, in the afternoon, of the in-door articles at the Hall. The Hall was first opened to the public in the evening, at an admission charge of ten cents, and over *twelve hundred persons* visited it. For Wednesday, the chief day of the Exhibition, an enterprising merchant in the place had printed the programme in full on the reverse of his business card, and these cards, liberally distributed, were so convenient for reference that we copy one of them as an example:

Agricultural Exhibition

AT FITCHBURG, ON WEDNESDAY, SEPT. 30, 1863.

Town Hall open at	7	A. M.
Plowing on River Street	9	do.
Draught Horses and Steers	10½	do.
Working Oxen	11	do.
View of Horses and Colts	11 to 12	do.
Carriage Horses	12 to 1	P. M.
Dinner of the Society	1	do.
Address by L. H. TUCKER, Esq.	2	do.
Meeting of the Society for Speeches, Poem, Award of Premiums, &c.	3	do.

HON. OHIO WHITNEY, JR. CHIEF MARSHALL.

The Ashburnham Band will be in attendance Tuesday Evening and Wednesday.

On Wednesday the receipts at the Hall, (at 10 cts. each, as before,) were understood to have been upwards of $250; at the church, in which the Address and other exercises took place, and at the general meeting afterward, no charge for admission was made. The church was well filled, and not so much by the ladies and others of the place, as by farmers themselves.

The plowing match attracted, we think, as large a number as we ever saw present at such a trial—the field being closely lined with interested spectators. A pleasant feature was to notice the quiet manner in which the oxen were trained to do their work—without any of the loud words and frequent blows which sometimes attend such labor. Another very good idea is this: while there is a class for plowing by boys under 21, they are also encouraged to compete in the same classes with adult farmers, and, if successful in competition with them, the amount of the award is *enlarged one-half*—a very pleasant incitement for the young, to excel, if possible, their seniors. The same is done, we believe, in the trials of draught horses, steers, and working oxen.

Of the stock and articles exhibited, we have not room to speak at length, and it may seem invidious to select some for especial notice to the neglect of others. But the Short-Horns brought by H. G. White, Esq., from the distant town of Framingham, and those of Messrs. A. C. and J. G. Wood, and A. O. Cummins of Milbury, should not be passed without mention; the Messrs. Woods, we think, also exhibiting South-Down sheep, and Mr. White, Cotswolds. J. T. Everett of Princeton and James Puffer of Westminster, were the leading exhibitors of fat cattle, and among contributors to the cattle pens, from other towns, were some of the best farmers of Fitchburg, Ashburnham, Winchendon, Lunenburg, etc.

The editor of a Massachusetts paper (Mr. BURT of the Northampton Free Press) who attended our State Fair at Utica, expressed great surprise, in the account of it prepared for his paper, that no more attention should have been paid to it by the leading newspapers through the State. We could not wonder that this neglect of an exhibition in which the Farmers of the whole State were interested, struck him so forcibly, when we found at Fitchburg reporters present from no less than *five* of the leading daily journals of Boston, fifty miles or so distant, and two from Worcester—all these papers containing the next day full reports of the prizes awarded, and many of them extended notices in detail of the various departments. Such an example is a good one to place prominently before the newspapers here,—the conductors of which have quite as great an interest in promoting the success of organizations designed for the improvement of our Agriculture, and probably number as large a proportion of their readers in the Farming community.

In the Hall there was an admirable collection of Fruits, so far as size and quality are concerned, although smaller in the quantity shown, we were told, than has been the case for a year or two past. The display of Apples included some very handsome plates and assortments, but the great features were the pears and grapes—all from local exhibitors, and showing most forcibly, how greatly the taste for and popular acquaintance with these two kinds of fruit have advanced within a comparatively short time. Indeed we were assured, that both in this respect, and as regards improved stock, a wonderful change has been affected during the ten years since the Society was organized. Among the pears, the assortment of Dr. Jabez Fisher, and the different varieties shown by Messrs. Leathe, Crocker, Boutelle, Lawyer, Works, Twichell, and others of Fitchburg, and Mr. Fay of Ashby, included many plates rarely excelled in size and beauty; and, among the grapes, remarkably fine Delawares were exhibited by C. A. Emory and others, very large and handsome Concords by W. G. Wyman and Dr. Fisher—Dr. F. also contributing Rebeccas, Dianas, Delawares, and a number of other sorts. There were several other quite large exhibitors. The show of Vegetables was very good.

Dr. Fisher's Orchard and Forcing House.

So much for the exhibition. We spent the night at Dr. Fisher's, and had the pleasure of testing some of the premium grapes and pears more fully. Of the Flemish Beauty, just in season, the Doctor had some unusually large samples, but it is not a variety on which great dependance can be placed. Of the grapes, the Concord proves itself the best market variety, some of the clusters and berries being large enough to resemble Black Hamburghs; the Delaware is the favorite of all for flavor; the Hartford Prolific is a free bearer, but must be marketed at once, as the berries drop from the cluster after a little time, while the Concord, although somewhat behind the Hartford in time of ripening, can be kept until the greatest glut of the market is over, and sold along at intervals until the last of October.

Dr. F. has a farm of thirty or forty acres, which, except for the production of a limited quantity of milk, is devoted to orchard and garden culture. He exhibited over 60 varieties of Pears at Fitchburg, but the half-dozen which may perhaps be considered to take the lead for practical purposes, are the Bartlett, Beurré d'Anjou and Doyenné Boussock on pear stocks, and the Louise Bonne, Duchesse d'Angouleme, and Urbaniste on quince. Out of 1,600 or 1,700 pear trees, we did not learn in what proportions these and other varieties were chosen—proportions change from time to time, as some are discarded and others taken to fill their place. In the orchard, which is planted in the quincunx arrangement, giving three ways for cultivation,—the purpose being to produce *fruit*,—the surface is frequently cultivated throughout the season, and Dr. F.'s experience convinces him of the correctness of the arguments so frequently advanced in these columns in favor of this system, as compared with attempting to raise grass or anything else but fruit on the same land. While the trees were young, small fruits or other crops were planted between them, but as soon as they began to come into bearing, the land was cleared, and is now cultivated at intervals sufficiently short to keep down the weeds,—not with that object alone, however, but for the actual benefit the trees are found to receive from the stirring of the soil. Dr. F. considers this equivalent to a dressing of manure. The implement used is the common Knox cultivator or horse hoe, penetrating about three inches below the surface; and, during dry times, this pulverized top soil proves capable of retaining the earth beneath it in a moist and mellow condition, in which the trees thrive vigorously enough, instead of being dried and baked top and bottom alike, as might otherwise be the case.

The curculio is a great enemy here to the growth of all sorts of fruit, depositing its eggs in the apple and pear, as well as in the plum. The injuries from this cause have been very greatly diminished by the careful picking up of all the fallen fruit from the beginning of the season until about this time, every other day regularly. Such a disposition is made of it, for cider or otherwise, as to prevent the reproduction of the insect in a very great degree.

Of apples, the Baldwin is the best market variety—productiveness, price, and adaptability for various purposes in eating and cooking coming into the account. As an eating apple alone, the Hubbardston Nonsuch is a great favorite.

Coming now to the Vineyard, which covers about two acres, and contains about one mile of trellis, the following is the system of planting and training adopted:—The lines of trellis are 17 feet apart, with a row of Bartlett pear trees midway between them, and three rows of strawberry plants—one between the trees and the trellis, and another in the same line with the trees themselves. The trellis is constructed with chestnut posts two inches square and ten feet apart—the end posts two by four inches. It has four wires fifteen inches apart, upon which Dr. F. trains the vines in a manner similar to that recently described by the editor of the Horticulturist—which gives the two upper wires to alternate vines, and the two lower ones to the remainder, so that each vine has a length of trellis equal to twice the distance between the vines, and two wires, one below for the support of the canes, and the upper one for the support of the fruit-bearing shoots. The trellis runs north and south, up and down a hill-side of moderate inclination.

No manure is applied to the vineyard, but the same system of constant cultivation adopted for the orchard, is carried out here; and the horse-hoe was at work between the rows at the time of our visit. The strawberry plants are kept entirely separate from one another, a foot apart, and no runners allowed, except to a sufficient extent to supply the demand for new plants. Dr. F. finds the *early planting* of new beds (or rows, in his case,) much more satisfactory than to defer it into September and October; if we understand his system rightly, as soon as the fruiting season is fairly over, each row is in turn plowed up, and the runners, reserved in the next one, set out to occupy its place, until the whole field is thus renewed.

While on the subject of Strawberries we may add that an important branch of Dr. F.'s horticultural practice is the production of this fruit for winter and spring as well as summer consumption. He sent strawberries into Boston last year, from the 15th of February continuously until the 15th of July, a period of five months. Although the Bostonian taste is shocked by bare mention of the Wilson's Albany, (not to venture farther and suggest that human beings *can* possess palates so vitiated as to admit of actually buying and eating it,) we were somewhat surprised to find this variety apparently ranking at the head for market purposes, here on Dr. Fisher's grounds, just as it does in Eastern Pennsylvania, and in

a great many other parts of this large country of ours. Dr. F. thought he would rather raise it, out of doors, for 15 cents a quart, than any other variety at 20, if not at 25; while, for forcing, it succeeds admirably—its flavor, sweetness and color are all improved, and no other sort he has yet tried compares with it in the success obtained. In 1862, he had one thousand plants in pots for forcing, and there are 1,400 now ready for the next crop. Six inch pots are taken, filled with leaf-mould, and early runners allowed to take root in them. Just as soon as the runner has fairly rooted, it is separated from the parent plant. It is thought important to discourage the growth of runners from the new plant, as it lessens its vigor for fruiting, and Dr. F. was so successful in this, last year, that scarcely a dozen plants out of 1,000, had sent out runners when they were taken into the house.

The house is 18 feet by 106 in length, span roof, running north and south. It is *double glazed*, with an interval of about an inch between the lights—and this precaution is thought to save about *one-half* the fuel required—an important point where coal is $10.25 per ton. The house is in quite an exposed situation, but 10 or 11 tons will carry it through the season. The heating is done by a boiler which Dr. F. had made to suit himself, and thinks much cheaper and *quite as satisfactory* as the patented arrangements advertised by New-York houses in some of the horticultural journals. It is two upright cylinders of boiler iron, respectively 26 and 24 inches in diameter, one within the other—thus leaving an inch all around filled with water. The top is also double, the water there occupying a space of 1½ inch. In the top, there is a hole large enough for the admission of coal, and the fire is made upon a grating far enough above the floor to leave room for the ashes,—the draft coming in from a flue at the side with a valve regulating the amount of air to be admitted. The height of the cylinder is 30 inches, which is greater than necessary—giving a capacity of something like 20 inches depth for the burning coal, a larger mass than is required in practice. The fire never goes out through the season, and a chimney high enough to clear the roof gives sufficient draft. The house is divided into two sections, the heating apparatus being in a wing near the middle, and a double line of pipes conveys the hot water from the top of the boiler clear around the house and back again around it before entering at the bottom, with gates by which it may be shut off from one section of the house at pleasure. Dr. F. has devised a very simple and efficient means of regulating the draft, of which we hope to present a full description hereafter.

The house is almost wholly devoted to the forcing of grapes and strawberries—the latter occupying shelves around the exterior, the former on elevated borders along the centre. These borders are filled with a mixture of one-third white sand, one-third mould and one-third cow-manure. The vines are in 13-inch pots, made especially for Dr. F., with five holes, an inch to an inch and a half diameter in the bottom, through which the roots make their way into the border. The Black Hamburgh is the main dependance, and the system adopted is to propagate from buds taken in January, by which means vines are grown that will fruit well the second season—indeed Dr. F.'s vines begin to ripen ther fruit in from 27 to 28 months from the starting of the bud. Only one crop is generally taken—the vine being then thrown away, but occasionally one is cut back closely and retained for a second fruiting.

Dr. Fisher's success as a fruit-grower led us to inquire thus particularly into the details of his management, of which we should like to present a less hurried account. It need scarcely be said that he sends to market no *imperfect* fruit of any kind. The out-door grapes and strawberries, as well as those that are forced, and the pears and apples, are all assorted large and handsome specimens, and the prices obtained are consequently much beyond those for which mixed fruit generally sells. He is doing something in the propagation of seedlings, from which we shall hope to hear in the future—having, for example, 140 seedling grapes derived from the Delaware, fertilized under glass with great care with the Black Hamburgh. It is too soon to judge of them yet, but they seem to escape mildew, so far, better than their progenitors.

Other Calls.

Our next call was at the farm of W. G. Wyman, Esq., the able and efficient Secretary of the Society, but the length of the notes already prepared will obliged us to speak very briefly of what we saw there and elsewhere. Mr. W.'s grounds include much that we should be glad, if time and space permitted, to notice at length, but must pass them by, merely mentioning the grapes, from one of which (a Concord vine) a short branch had been cut for the exhibition containing *twenty* large clusters, and, among farming matters, the sheep—a cross between the Cotswold and Leicester. Mr. W. has a very neat way of marking his sheep, by brass medals, which can be procured at about $1 per 100, attached to the ear with a slit ring, his initials and the No. of the sheep stamped on the medal.

After a passing call upon Gen. Wood, who was not at home, we proceeded to the farm of Mr. Abel F. Adams the present representative of the Society in the Massachusetts State Board of Agriculture. This farm lies in full view of Dr. Fisher's place, so that we had already had occasion to admire its clean, well-built walls, the perfection of the grass land, and the evident neatness and order pervading the whole. The purpose of the farm is the production of milk; it contains about 100 acres, and Mr. A. milks 12 to 15 cows in summer and about 20 in winter, but, as he is constantly buying and selling, he often has a larger and sometimes a smaller number to look after. The total stock kept on the farm will average about 25 head in summer and 30 in winter. The cows are fed morning and night all summer—with hay until the 15th of June, then with clover, then with green oats sown for the purpose, then with fodder corn lasting say from the fore part of August for two months, and then with pumpkins, and, when the crop is as plenty as in 1862, sometimes with apples. One item in Mr. A.'s management is worth noticing especially: where the grass becomes poor on any spots in the field, overgrown with moss, as it sometimes is when the rock is close to the surface, or otherwise, he puts on a dressing of compost, and then about the middle of June harrows in *rye mixed with grass seed.* This is in the open pasture, but he thinks it none the worse for having cattle tread upon it, and before the season is over the rye gives them a good feed, and the next year the grass is renewed and becomes as good, if not better, than the rest of the field.

Mr. Adams has been one of the prominent movers in the Fitchburg Farmer's Club, as well as among the leading members and officers of the Worcester North Agricultural Society. His farming might afford no little instruction to our readers, and we should be glad if both he and our other Eastern friends would more frequently communicate the results of their experience for the benefit of those whose attention may be attracted by these imperfect notes. And we should not omit, in conclusion, to acknowledge the hospitable courtesies of L. H. Bradford, Esq., President of the Society, to whose attentions we owe so much of the pleasure of the trip. L. H. T.

ROTATION OF CROPS.

The discussion on this subject at the Utica State Fair (reported in COUNTRY GENTLEMAN of Oct. 1st) has elicited from Hon. A. B. CONGER, chairman, the following interesting statements:—

1. Though the climatic conditions of the State vary greatly in those particulars observed by the meteorologist, there is yet a law of uniformity with refereuce to the early occurrence of extreme heat and cold, drought and moisture, as well as of their transition periods which give to a very large belt of the State a fair average medium in respect to such conditions. These are quite necessary in a system of rotation of crops designed to meet the leading points of the question, to wit: a maximum annual cash revenue and the largest amount of rich fertilizing manures.

2. To apply this system wisely, it is first necessary to divide farming lands into those which are properly devoted to pasturage, and those which are strictly arable. None should be included in the latter class which may not be profitably used for deep tillage, and subsoiling.

3. Under this general division we notice the fact that in the present system of dairy farming, the producers of butter and cheese, which now bring large prices for exportation, (the statistics having been furnished in the discussion that 22,000 tons of cheese and 16,000 tons of butter had been exported from the port of New York in 1862, 75 per cent. having been shipped to English markets,)—that these producers are buyers of grain for the support of their dairy stock. It may soon be that instances will be found where the growers of tobacco, or some other high priced product, will extend the culture of such crops until they also are purchasers of ordinary farm produce. In such, and all specialities in farming which a state of the markets may justify for the time being, without stopping to notice the results of their general adoption, in the glutting of markets, &c., it is sufficient to remark that the farmer purchaser of grain for his stock refuses to make for himself the profit of raising that grain. While it is not the province of this society, in its discussions, to discourage any such specialities in farming, it certainly cannot undertake to give any encouragement to their future, or to any system of farming which discards the raising of Indian corn, the most profitable crop, the sheet anchor of American agriculture.

4. The five course system generally adopted in this State, on arable lands of corn for the first year, oats or barley for the second, winter grain for the third, and hay for the fourth and fifth, is no longer productive of the large returns sought for in this question; for where the cash sales are increased, whether of grain, or hay, or even of straw, the manurial products are proportionably decreased, and thus the capacity of the farm to pursue the course. The interposition of a root crop after the corn, with deep tillage and special manuring, as well as that of a clover crop after the spring grains, would tend to enrich the surface by the draft made by those crops upon the subsoil, and would increase the amount and manurial value of winter feeding.

5. At the present time, if corn for the first year were followed by roots as above for the second, flax might successfully follow for the third, (provided the system of water rotting the flax is wholly abandoned, and the outer boon or shove removed by proper machinery, and restored to the soil,) and would be found to exhaust it only to the extent of the seed sold, and in this way might be a safe crop for winter wheat to follow, and this with two years of hay, would make a six course system.

6. The four course system of England and the five course of the county of Onondaga are remarkable. The latter, better adapted to this country, is for the first year corn upon a clover and timothy sod, for the second oats or barley, for the third wheat, with 6 quarts of timothy and clover each and 1½ bushels of plaster; for the fourth hay, and for the fifth pasture. Under such a course, where all the coarse fodder and hay are consumed by sheep, and a few horses and cows for farm use, and only wheat and the produce of the fold sold, there is but little left for improvement, except in some regions in the introduction of roots and the feeding of them to sheep, and with straw to store cattle. The advantage would be marked in economizing the feeding value of straw.

7. One ton of good wheat straw, not over ripe, besides 34 8-10 lbs. of sweet oil of grateful odor to cattle, contains nearly 20 per cent. of good food, and water, and is about ⅓ of the feeding value of the best hay. Of the remaining 80 per cent., generally rejected or passing off in the manure heap, and treated as insoluble woody fibre, nearly 20 per cent is soluble in dilute sulphuric acid, &c. It is more than probable that the pectic acid, &c., of the turnip plays the same part in rendering that portion of the straw which is insoluble in water alone, soluble and thus digestible. The English farmer keeps his store cattle fat through the feeding months of the year on straw and turnips rendered fine, and allowed to remain long enough mixed together to produce a slight action of the acid of the turnip marked by heat. The severity of our winters forbids the copying of this method, unless the heat may be kept up artificially, (perhaps by the process of steaming,) and economically.

8. The rotation of crops pursued in this country has been easily departed from by the farmer, who has not pursued the methods of deep tillage and high manuring, and is mostly a system of pliable adaptation to the state of the markets. In England a system of rotation once adopted is rarely departed from. We may note that while the price of ordinary farming land in this country has not advanced more than 50 to 80 per cent., the rentals paid by the English farmer have been advanced in the past 30 years from 1s. or 1s. 6d. sterling per acre to £3. 10 and in some instances to £5?

9. If a four, or six, or even an eight course system were adopted on an arable farm, say of 120 acres, and once established, the annual product of each farm would be, say on the six course system, 20 acres of corn; 20 acres of turnips and potatoes; 20 acres of flax, oats or barley; 20 acres of wheat or rye; 40 acres of hay; and the producer could determine for himself how much he could profitably feed to his farm stock, sheep or store cattle, &c., how much he could sell of grain and potatoes, hay and straw for cash, and how large increase in his manure heaps he would gain for the enrichment of his land, and the diminution of expenditure for special manures.

9. As no plan of such a system of rotation has been submitted in this discussion, with tables giving an estimate of the value of each crop in the series, or showing how much might be directly sold or how much profitably be fed to stock, with a careful measurement of the increase in the manure heaps, it is recommended by the Society to the Executive Committee that prizes be offered for essays based on experimental trials after the above methods on the best system of rotation to be recommended to the farmers of this State on their arable lands.

SYSTEM IN LABOR.

There is no subject which ought to engage the minds of our farmers so much as that of system. The student has his hours of study, his hours of recitation, and his hours of recreation. The merchant has his hours of thought, in which he closely calculates his profits or loss, and by it establishes a course of action; and so it should be with every class of professional men. System is the life of business, as well as the life of trade. Whatever our calling or profession in life may be, the more systematic we are, the more will our efforts be crowned with success, and vice versa. A man can hardly wish, much more expect to be successful in any profession—much more that of farming—unless he pursues a course that shall guarantee him success. And how absurd the idea that we, as farmers, upon whom every class of human beings more or less depend, and upon whom the best interests of our nation hang, should pursue a course so loose and hazardous. Has habit brought on such a state of affairs, or is it because our fathers and fore-fathers have tolerated and cherished the existence of such principles in our land?

We are a progressive people. Every year brings its wonders. Every day brings the news of some glorious event, and shall we stand in wonder and amazement and not urge on this glorious enterprise? Many may suppose that we are advancing in the art of agriculture, and that we keep pace with every improvement of the day. This is certainly true to some extent, but how obvious it is, were it not for a certain class of men and the influence of leading journals, we should fall far behind what we are now; and, too, should every class extend their influence, to develop new plans and resources, what a mighty influence we should have in the world. Thus you see we may lose ground, and if system does not enter our plans and exercises, we fall far in the rear of the other improvements of the day.

Agriculture is made a matter of too much indifference. Many embark in this enterprise, thinking that they are not fit for any other, and to their astonishment are not fit for this even. Such men only disgrace the profession, and by their influence clog the wheels of that vast machinery which more or less regulates the destinies of men. Man cannot prosper in any profession unless he first study the rudiments of that profession, and thus become versed in its design and operation. Too much knowledge and skill can never be achieved in order to be a successful farmer. Knowledge is useful in order to ascertain the elements of the soil, its combinations—the elements of the air and water; also the elements of all the various productions of nature—her varied scenery—her beautiful landscape,—all these present a field in which the mind may rove for successive ages, and then find room for thought. Skill is necessary in order that this knowledge may be rightly used—the way it must be applied to bring forth the greatest results. Ignorance, of course, has the opposite effect, whatever our profession.

What I wish to urge upon farmers generally, is more system a and more practical way of farming. Let each treasure up new facts, that when unfolded we may be better acquainted with our employment. Let farmers become more conversant with each other, and their habits and manner of conducting their business operations, enter more largely into their practices, if worthy of notice; if not, chide the same that each may be bettered by their example. And should public meetings be held in every school district every week, where matters of general interest may be sought out, it would certainly have a great effect upon community.

And we need not stop here; monthly associations should be held in every town, especially during the long winter evenings, where various topics of interest should be discussed. This would bring in every class of farmers, and where a spark of interest now exists in the breasts of any, it would be fanned to a flame. And town associations could report at their annual county associations, and make that more a subject of general interest. And in fact, some such method will have to be taken, that we may secure the patronage of every citizen of the county, whereas now scarcely one-half of the farming community extend their influence for its support.

We should be more systematic in our individual finances. Few can tell us the cost of a field of corn, of a bushel of potatoes, or any of the articles of produce. Few can tell us what it costs, estimating the price of produce, to raise a cow or fat an ox. Fewer know in what channel to turn their exertions, that they may secure the most profit. An account should be kept of every field. It should be charged with what is carried on to it in the form of manure, and credited with all it produces. An account should be kept of every cow, sheep, horse or ox, in the same manner. The farmer should know his gain or loss in every operation, and he would be prepared to direct his attention to that which would secure him the most wealth and happiness. He may balance his accounts with his farm, as a merchant balances his accounts with his customers, and know how he stands and what his profits are, every month. A man who carries on an extensive business may be involved in ruin, if close calculation and a correct system be not adopted. And this is why so many fail. A careless and loose plan of operation is most certainly productive of evil, and never will produce a a happy and contented state of mind. We should be more systematic in our hours of toil. One branch of business should never encroach upon another, but all be executed in its time and season, and then one will not be left at the peril of the other.

I am glad to say, that we are soon to see the day when every farmer's account will be as correctly kept as the merchant's, and his daily toil is becoming less and less wearisome. Let farmers look into this, and see if their co-operation will not bring forth glorious results.

Franklin, Sept. 14. P. J. SHERWOOD.

PROFITS OF SHEEP HUSBANDRY.

Every one says, "Oh well! sheep are worth something now, but it won't do to invest. Sheep must come down by another spring, and then where is your money?"

We buy sheep now at from $3.50 to $12, and from that to $1500 per head. This last price is the highest of any sheep sale that I am acquainted with. We buy here good healthy young ewes from $6 to $8 each, and the best at $12. I am not speaking now about full bloods, although we have them here. The sales in full bloods are not as numerous as among the quarters and half bloods. I think we can count on 50 cts. per pound for wool another year. Well, say we buy one hundred lambs at $3 each, as I have seen several lots sold at that price, that will shear six pounds a head. Well, say they shear five to eight pounds each, at 50 cents, that would bring each sheep at $2.75 a head. Cost of keeping lambs $1 each—that will keep a lamb well, and after shearing, your yearlings cost you $1.25. If you take a lot of old ewes, I have seen bought at $4 each, that would shear five pounds each, at 50 cents for wool your sheep bring you $2.50, and a lamb at say $2. Then a dollar for keeping, and your sheep costs you fifty cents when it is sheared. These figures are set low, as lambs are selling here at $3 instead of $2. I cannot see how a farmer can lose money in sheep, at the present prices. Of course it won't do to go into the fancy prices just now; but good common farm sheep are well worth the prices asked.

FATTENING ANIMALS.

A very common error among farmers, which needs correction, is the opinion that animals may be fattened in a few weeks, and fitted for market by heavy feeding, or as it is termed, "pushing." Many farmers do not think of beginning to fatten their hogs or cattle for early winter market until autumn has actually commenced. Their food is then suddenly changed, and they are dosed with large quantities of grain or meal. This sudden change often deranges the system, and it is frequently some time before they recover from it. The attempt to fatten a poor animal in six weeks, reminds one of the puff advertisements to teach "French in six lessons." From observation and inquiry, we find that the most successful managers adopt a very different course—feed moderately, with great regularity, and for a long continued period. Regularity they find of the utmost importance, and they particularly avoid the course recommended by a correspondent a year or two since, to give "a feeding of meal now and then." The most successful pork-raiser that we have met with, commences the fattening of his swine intended for winter market, *early in the preceding spring.* We might almost say he commences the autumn before, for he keeps his young swine in a good rapidly growing condition all through winter. He always begins very moderately, and increases the amount gradually and with great uniformity, taking care never to place before the animal more than it will freely eat. With this treatment, and attending strictly to cleanliness and the comfort of the animal at the same time, his spring pigs at ten months usually exceed three hundred pounds, and sometimes have gone as high as four hundred and fifty pounds, and wintered pigs run as high as five to six hundred; the corn, which is ground and scalded before feeding, netts him one dollar per bushel, when pork sells at five cents per pound.

Our readers are generally aware of the opinion of JOHN JOHNSTON on the subject of the heavy grain-feeding of cattle, believing it to be attended with more waste than profit. This opinion has been corroborated by the careful experiments of a number of farmers, and among others, an accurate and enterprising neighbor, who weighs all his animals weekly, informs us that a fine steer when fed regularly each day with four quarts of barley meal, gained eighteen pounds per week; being urged "to push" this animal, he increased his feed to eight quarts daily with a diminution in his growth; the feed was then increased to twelve quarts, when he scarcely gained at all. Another, and an extensive cattle-fattener, informed us that he and a neighbor commenced fattening each a fine steer at the same time; the neighbor's being the heaviest on the start. Our informant fed four quarts of meal daily; his neighbor, twelve quarts. When they were slaughtered, the latter was the inferior animal of the two in weight.

Another instance has recently occurred to our observation, illustrating the position here taken. An old cow, naturally raw-boned, was fed by the owner with the view of converting her into beef, commencing about the middle of autumn, or as soon as the corn was ripe, with the hope of turning her off to the butcher about the first of winter. She was stuffed with all she could eat, and by the end of the year had scarcely gained in weight. The owner concluded that she did not take on flesh naturally, that there was no use in trying to fatten her, and she passed into other hands and different treatment. Before winter was over, a regular system of feeding with barley-meal was commenced, first with only a pint each night and morning, which was afterwards gradually increased to a quart. In a few weeks the improved appearance of the animal was quite visible; she was placed in good pasture, and by the middle of summer her feed had been gradually increased to two quarts each night and morning. By the first of autumn she had become fat, sleek, and beautiful, and was sold for a good price to the butcher.

Intelligent farmers differ as to the propriety of feeding meal at all to pastured cattle; some insisting that it only destroys their appetite for the grass, and that if fed on the latter alone, they will improve in condition more rapidly and steadily than in any other way. This is certainly not true with all animals, as, for example, with the case just mentioned; but there are others which have a natural propensity to flesh, that seem to improve best on rich pasturage alone, doubtless partly in consequence of the long continued and regular supply of good food, which they thus receive, as contrasted with sudden and irregular grain feedings. We should be glad to receive the results of every carefully tried experiment in relation to this point from our correspondents.

What we wish to urge more particularly at the present time is a caution against the common error of attempting to fatten suddenly by over dosing with grain and meal as a sort of compensation for the previous starvation and raw boned system of treatment. Instead of beginning to fatten just at the last stages of an animal's life, the work should be commenced as soon as it is born, at least so far as preserving a good growing, healthy condition right onward, without any interruption through winter and summer. Farmers who practice on this plan make the largest profits, and can dispose of their herds at any time at high prices for cash in hand. Their less successful neighbors term them "always lucky," but do not seem to be aware of the truth of the old saying, that "diligence is the mother of good luck."

ALBANY COUNTY FAIR.

The Albany County Ag. Society held their Fair on the Washington Parade ground in this city, commencing Sept. 29, and ending Oct. 2. The weather was just what is most desirable for such an occasion, and the multitudes who visited the exhibition seemed to enjoy it to a high degree. The arrangements were well made, the buildings and accommodations for the show as complete as could be desired, and the whole management reflected credit upon the officers of the Society. The exhibition however was, though good in some respects, not what it might or should have been. Several of the fine buildings, as well as many of the pens, were nearly empty. But though, like most other Fairs from which we have heard this year, there was a deficiency in numbers, most of what was on the ground was of superior quality.

Upon the whole the Fair passed off as satisfactorily as any previous one of the Society, and the receipts, about $4,000, were equal to all the requirements of the Society.

THOMAS' AMERICAN FRUIT CULTURIST.—For a short time this valuable work was not to be had, and we were obliged to leave several orders unfilled. We are now able to supply it, and those who have heretofore written us on the subject may therefore depend upon receiving it promptly on the arrival of their orders—price, $1.25 per copy by mail, postpaid.

PYRAMIDAL TRAINING OF GRAPES.

During a visit some time ago to the extensive vineyards of Dr. UNDERHILL, and of his brother, WM. A. UNDERHILL of Croton Point, they pointed out the importance of allowing the vines sufficient room to extend themselves, especially in a soil of much fertility—rich soils requiring higher trellises and greater distance for the vines. Soils of moderate fertility were preferred. All attempts to dwarf this vine, by cutting back freely and planting closely, had been found useless long before Bright had published his famous dwarfing system, and afterwards discovered its fallacy when applied to free-growing American sorts.

We have often heard the remark that the Isabella grape bears better when allowed to extend itself among the branches of trees—this is doubtless for the reason already given, namely, plenty of room for its growth. This mode has been lately modified, by providing supports for the vine similar to those often provided for ornamental climbers, by inserting into the ground the stem of a tree, with the branches trimmed and cut off at a uniform length from the body, but tapering upwards in the form of a pyramid. The vines, properly trained on these, and thinned during the summer, present a beautiful display when loaded with the ripened purple clusters. The best kinds of wood for these supports are cedar and locust. The former gives the handsomest shape, but locust trees may be occasionally found that answer an excellent purpose with some care in the training. The smaller, short-jointed and more feeble growers among the American sorts may be trained on smaller supports, or to single stakes, if the following mode, described some years ago in the Ill. Annual Register, is adopted, with a little more height to the posts, and more space between them: Stakes eight feet high are set seven feet apart, a vine planted at each, and immediately cut down to two eyes. The first year two shoots are allowed to grow, and are carried up spirally, both in the same direction, about five inches apart, around the stake, till they reach the top. The laterals grow at random. They are pruned back in the fall to eighteen inches, and the laterals to one eye. The second year, two shoots are carried up as before, from the two upper eyes, the laterals requiring summer pruning. In the fall the vines are cut back to within eighteen inches of last year's wood. This course is continued till the vine permanently covers the whole of the stake or post—whatever surmounts it is cut back. The fruit is borne on the side shoots, the pruning is done on the short spur system, and a handsome pyramidal form is given to the whole.

MILK FROM ONE COW.

Mr. W. A. Comstock of Cooperstown, who says he has a "passion for good cows," sends to the CO. GENT. a table in which is registered the weight of milk produced by one of his cows at each milking for the six last days of May and the months of June, July, August and 29½ days in September. The cow was milked and the milk weighed by Mr. C. during the whole period, and was as follows:

Last six days of May	261	pounds.
June	1,549	do.
July	1,475	do.
August	1,188	do.
September	1,315	do.
Total for 127½ days	5,788	pounds.

Being an average of a fraction over 45 pounds per day for 127½ days.

Mr. Comstock says: "My cow is of the native breed, so far as I can learn, and five years old last spring. She was not dried off before calving, but continued to give milk up to 22d, when she dropped her calf. We began to save her milk the 26th of May, as shown in the record. No one has milked her but myself, or weighed her milk. 112 pounds of her milk makes 6 pounds of as good butter as I ever saw. Now for her feed. She is one of five cows, or of four cows and a heifer, kept on three acres of pasture, days, (until the after feed,) and stabled nights, and fed cut grass and the slops of the house, without grain or provender. The past week she has had two pumpkins a day besides the above."

Practical Experience of Farmers Wanted.

MESSRS. EDITORS—I have been much interested this summer reading the many letters from different ones in your excellent paper, giving descriptions of the country about them, or accounts of the crops, &c. I should be much pleased for one, and doubt not many others would be also, if these letters were more frequent.

The season of severe labor is nearly over with a majority of farmers; their time is not so fully occupied, and a few lines from their varied and abundant experiences would be very acceptable and profitable. There are scores and hundreds of these men, scattered all over this State and other States, who have much that they might tell us that would interest and instruct some—excite and encourage others.

I have many times wished as I have been travelling the different thoroughfares of this State, and have seen scattered here and there a thrifty farm, that I could stop and talk with that man, and ask him as many questions as I liked. We do not know these men, not even their names; but that matters not; they are good farmers, for their fences, out-buildings, and luxuriant crops, show it—and if you could only sound the man, you would find he had not labored all his days to no purpose, but rather that he had learned a great deal from experience and observation that was new to you, and consequently pleasing and profitable to hear. If you could only go over his farm with him, and have him point out to you this improvement and that, and here him tell you how he came to do this thing that way and that thing so, you would find he did some things to a better advantage than you, and that his sphere of observation had led him to results you had not thought of.

Now I do not expect to visit one of a thousand of these farms, nor hear from one-half their owners; but what I do want, is that those who can write anything they think would be new or interesting, to do so; and if they only will, we shall hear from the storehouse of their experience something that will interest and instruct us, and help to while away the long winter evenings so close at hand.

In a few days I will let you know where we live, and what we are doing up here in this rugged mountain county of OLD ESSEX. *Westport, N. Y.*

We heartily second the call of our correspondent, and trust he will set our readers a good example in the articles he promises.

To Prevent a Horse from Pulling at the Halter.

Tie a rope around the neck, put it through a hole in the edge of the manger, and tie it around the fore leg below the knee, and when the horse pulls, the rope will slip through the hole and pull up the fore leg, and he will soon give it up. T. L. HART. *West Cornwall, Ct.*

THE CULTIVATOR.

ALBANY, N. Y., NOVEMBER, 1863.

☞ Rev. Dr. FISHER, in the Address prepared for the late State Fair, but prevented from delivery by the drenching rain of Friday, expresses many suggestive thoughts in a forcible and eloquent manner. "Precisely the same principle," he justly remarks, "prevails here as in all other departments of human labor, the principle that intelligence, other things being equal, makes the superior farmer and mechanic." After illustrating and enforcing this idea at length, and showing the consequent importance of Education to the farmer, he briefly but earnestly urges that a higher standard of education among them would probably bring about one much-needed change,—namely, a choice of men for positions of public trust, who would feel that they were answerable, for the way in which it is discharged, to the intelligent judgment of the Farmers of the State; and who, in view of this motive, would give that weight to the influence and interests of the producing class which it fairly merits, although as yet unattained. Dr. F. says:

"When mindful of the importance and dignity of your profession,—no longer suffering the man whom you elect to represent you, to override your own best interest—your voice shall be heard in our Legislature, as a power not to be resisted, then we shall see a new and nobler order of things rising around us. It was one of the earliest lessons taught me by parental lips, not to speak evil of dignities. And though sometimes the impulse to do it is strong, I do not intend to yield to it. But when I see a Legislature largely elected by the farmers and mechanics of this State spending months of turbulent agitation on the question whether the city of New-York shall have another street railroad; when I see the rights and interests of a whole State held in abeyance, until they are shaped to suit the narrow views and partisan feelings of the advocates of a merely local project; when I see a great measure involving the interests of the farmers and mechanics of this State for generations to come allowed a few hours debate; when I see a magnificent gift of a million acres of land designed for your benefit, limited for years to come to a small section of the State, and that too without consulting the views of those friends deeply interested in the education of the people, in opposition to the expressed remonstrance of the able and honored men who for so many years have guided the affairs of this association and done so much for the agricultural interests of the State—then I feel that it is high time you begin to exercise the powers which of right belong to you, and that you should have a voice in dictating the character of those measures which affect so largely the interests of your children."

The remainder of the discourse is devoted to an exposition of the power of association in accomplishing improvements, and to a well deserved eulogy of the patriotism displayed by the Farmers of the State and Country during the present war,—together with an expression of gratitude to that Divine Providence which has rewarded our exertions with the bounteous harvests of the past three or four years.

Dr. FISHER might have added, in illustration of the importance of these harvests to the foreign trade, as well as to the domestic comfort and tranquility of the country, the fact shown by tables then just published, giving our exports of Breadstuffs to Great Britain and Ireland during the 17 years preceding Sept. 1st, 1863—that out of each of the crops of 1860, 1861 and 1862, we had averaged shipments thither of about twenty-five millions bushels of wheat, twelve millions bushels of Indian corn, and two and a quarter millions barrels of flour, (*per year,*) being about *six times* as much wheat, *three and one-third* times as much corn, and *twice* as much flour as the average annual exports of the preceding ten years. Without the power of making these exports, in how different condition from what they now hold would have been the finances, not only of the National Government, but in a greater or less degree of every individual within its sway. Imagine this out-flowing stream of our agricultural products, steadily maintaining itself from Sept. 1st, 1860, through to Sept. 1st, 1863, at the rate of 12,000 bushels of grain, and 750 barrels of flour, going forth from our ports for every working hour of every working day during the three years—making up in a great degree for the lack of cotton to export—a lack which was expected to cripple our commerce with other countries—and tending so greatly to the preservation of peaceful relations with those nations that have been buyers in our market.

☞ Mr. John Coleman, the intelligent manager of the Woburn Park Farm, writes to the London Mark Lane Express, that he estimates his wheat crop this year to average fully *fifty bushels per acre over a surface of* 120 *acres*! To show how nearly his estimates may be relied on, he states that at this time last year he calculated his crop for 1862 to average 33 bushels per acre; when threshed out the amount yielded (155 acres) was 5,135 bushels, being only 20 bushels greater than called for by his estimate—which is certainly close "guessing." The average crop for 13 years previous to 1863 has been 32½ bushels per acre on this farm,—the nearest approach to the enormous product of the present year having been in 1854, when the average yield was 41¼ bushels per acre. Mr. C. says: "This makes the crop of this year to be 17½ bushels above the average of the thirteen previous years, and I am quite inclined to think that in this estimate I am under the actual quantity rather than over. I will make no remarks, but let these figures speak for themselves; all I say is that where the land has been well farmed the crop this year is *enormous*, the clay land being in some instances *double* the produce of the past three seasons."

☞ At the Fair of the American Institute, the proprietors of the Mount-Hope Nurseries, Messrs. ELLWANGER & BARRY exhibited 347 varieties of apples, pears, and plums, occupying a table 130 feet in length, by 4 feet in width. Messrs. E. & B. were also liberal exhibitors at the State Fairs of this State and Ohio, as well as at many of the County Fairs in this and other States.

☞ Among the most active of our Horticultural organizations at present, is the Fruit-Growers' Society of Eastern Pennsylvania, the 4th Annual Report of which has just reached us. It contains much that is interesting, of which we may avail ourselves for notice hereafter. Among other items, we observe that Wilson's Albany Strawberry seems to fully hold its own in Chester and the neighboring counties, where it has been a favorite variety for several years.

LARGE HAY CROP.—The *Windsor* (*Vt.*) *Journal* says that Col. L. B. DUDLEY of Royalton, has cut, the present season, from two acres and twenty-three rods and a quarter, by measurement, thirteen tons and two hundred and forty pounds of hay, being more than six tons to the acre

☞ The Annual Register of Rural Affairs for 1864, we are happy to say, is now ready, and we hope, in the course of this week and next, to fill the orders thus far received. For a summary of the contents of the forthcoming Number, we refer to a full advertisement in another column.

Of the subjects treated, the *Farm Work of the Year* is first taken up, and receives the largest proportion of space. Suggestions for each month are given at considerable length, and while it is of course impossible to adapt such hints exactly to the wants of every reader, it is hoped that they will prove useful as reminders in some respects, to any farmer who may consult them. In future issues, the various subjects of Gardening, Fruit Raising, &c., will probably be treated in a similar way.

Road-Making is a matter in which the farmer is more intimately concerned than any other class in the community. Mr. Herendeen contributes a chapter, full of useful data and valuable suggestions of a practical kind.

An adjunct to other farm operations, of considerable importance, and sometimes carried on as the main object of a small country place, is the *Management of Swine.* The experience of successful managers is described, with such recommendations as could be added from personal practice.

In *Mechanical Contrivances*, a number of more or less recent improvements are illustrated.

Under the head of *Dairy Farming and the Cheese Factories*, will be found full answers to many questions elicited by the great success of the latter, as to their modes of association, manufacture, etc. The cheese factories are not only doing a great work for the farmer, where they have been established, in diminishing the labor of his family and in adding to the profits of his pursuit, but also for the country itself, in furnishing an article sufficiently good and *uniform* in quality to *command* a foreign market, and thus add an important item to the tables of our exports. It is believed that this article will nearly, if not entirely, serve the purpose of a visit to the Factories themselves, for those desirous of investigating the details of their management.

Dr. Fitch's admirable article on Entomology in the Annual Register for 1863, has done much to promote increased interest in this branch of science, and we now present full directions as to *Collecting and Preserving Insects* for examination or as specimens for the cabinet.

Under the head of *Fruit Culture*, P. Barry, Esq., contributes directions for the culture of Peaches, Apricots and Nectarines in Pots or Boxes; Chas. Downing, Esq., notices the Newer Pears, and a very large amount and variety of miscellaneous horticultural matter closes this department.

Opportunity has been taken of the very frequent requests for directions in the Canning of Fruits, to present, in the division of *Domestic Economy*, very full instructions, by which even the novice might successfully provide a full supply of these luxuries for winter use. Many other items of household interest are also given.

Under *Rural Economy*, Mr. Todd offers a detailed article on the subject of Painting, followed by numerous editorial items as to the out-door labors and processes of the farm.

Lastly, in the *Poultry Yard*, a good plan of a house is given, with facts in the owner's management.

—As a whole, the Tenth Number of the Annual Register will thus supply a variety and amount of useful information, second to neither of the preceding issues, which have met with such general commendation and so large a demand. The prices are given elsewhere, but it is not inappropriate to suggest here that a dozen or two copies might probably be disposed of, as presents or otherwise, by every reader, in such a way as to confer much benefit upon his neighborhood,—especially in the present abundance of money and growing inquiry for practical and trustworthy rural reading. Twelve copies are sent, postage prepaid, for $2.24.

The Wheat Midge.—Joseph Harris of Rochester, in his late excellent address on the wheat crop, says, "I never feared the midge; and I fear it less to-day than ever." He adduces a number of instances showing that the midge usually destroys about a certain amount of wheat per acre on all land, whether the crop be good or bad—if, for instance, the crop be only ten bushels per acre, the midge would be likely to take one-half or five bushels; if, however, the crop should be thirty-five bushels, the midge would be likely to take only five, still leaving thirty bushels. In the former instance, one-half of the crop is lost, in the latter, one-seventh. Hence the great importance of raising the best crops by bringing the land to the best condition by underdraining, and such judicious manuring as has been found to produce the best results. He thinks the practice of exclusively plowing in green crops, by giving the soil much carbonaceous matter, tends to promote too luxuriant a growth of straw, and to somewhat retard the ripening of the grain—thus rendering it more liable to the attacks of this insect. A better way is to convert clover and other green crops to animal manure, (especially by feeding sheep on the land,) which, from the ammonia it contains, is peculiarly adapted to the wheat plant. He especially recommends peas for feeding to domestic animals on this account, and for never selling off the farm, remarking that the manure from feeding peas is worth twice that from corn. He strongly objects to the common practice of calling half-rotted straw, manure.

Buffum Pear.—We noticed on p. 225 of vol. XX. of the Country Gentleman, a large tree of the Buffum pear, grafted twenty-four years ago, and now with the stem ten inches in diameter, 25 feet high, and with a top about 20 feet in diameter. It bore 25 bushels last year. The owner recently informed us that it bore 17 bushels the present scant season, and that for several years past it has averaged about this amount. He remarked that if the pears were allowed to remain on the tree until they dropped from maturity, they are apt to be dry and mealy, and although of larger size, inferior in quality to those that are picked a week or more earlier. He has therefore adopted the uniform practice of gathering them before full maturity, and ripening within doors. A fine Buffum pear tree, scarcely inferior in size to this, stands on the grounds of Col. Wilder of Dorchester, Mass. This variety is a splendid pear for orchard culture, and when properly ripened is of excellent quality—quite good enough for any one, except it be just after a surfeit.

Pear Culture.—A subscriber to the Co. Gent., at North Haven, Ct., writes as follows: "I have about 400 pear trees, mostly standard, 4 years planted, where I allow no weeds or intermediate crops. I have no reason yet to think them a humbug. I hope to be able to give you a good account of them."

☞ A sale of Shropshire-Down and South-Down Sheep, belonging to PETER LORILLARD, Esq., Fordham, Westchester Co., took place, Oct. 7th. It was attended by a number of prominent gentlemen of the neighborhood and from a distance. Many of the sheep were in low condition, and while the prices will not appear high on paper, all were sold, and the result is perhaps quite as favorable as could have been anticipated after an examination of the flock.

Of the Shropshires, 110 in all were disposed of, young and old: including 74 ewes and ewe lambs, and 36 rams and ram lambs—the former in lots of from four to six, as follows:

SHROPSHIRE-DOWN EWES AND EWE LAMBS.

No. Lots.	No. Sheep.	Purchaser.	Agg. Price.
1	5	T. King, Fordham,	$25.00
8	33	Col. L. G. Morris, Scarsdale,	394.00
2	10	Wm. Beebe, Long Island,	135.00
3	0	Hon. A. B. Conger, Haverstraw,	258.50
1	6	N. L. Chafee, Jefferson, O.,	39.00
	74	sold—average $11.50—Total,	$851.50

SHROPSHIRE RAMS AND RAM LAMBS.

16	16	John Cornell, West Farms,	$91.50
10	10	Hon. A. B. Conger,	280.50
1	1	S. W. Johnson, Ellicottville,	10.00
1	1	G. P. Bradford, New-York,	11.00
1	1	J. N. A. Griswold, Newport, R. I.	13.00
1	1	W. S. Messenger, Great Neck, L. I.	13.00
1	1	Thos. Swift, Highbridge,	26.00
4	4	Wm. Beebe,	68.50
1	1	R. S. Fay, Lynn, Mass.,	50.00
	36	sold—average $15.90—Total,	$572.50

Of the above, the highest prices were obtained for the two-year old ram which took the first prize at the late State Fair at Utica,—purchased by Hon. A. B. CONGER for $125—and for another two-year old, bid off for SANFORD HOWARD of Boston, as it was understood, for R. S. FAY, Esq., at $50. The highest priced ewes were a pen of five, imported, which took the first prize at Elmira, 1861, and went to Mr. Conger at $28 each.

Of the South-Downs, 126 were sold—93 ewes and ewe lambs, and 33 rams and ram lambs—as follows:

SOUTH-DOWN EWES AND EWE LAMBS.

No. Lots.	No. Sheep.	Purchaser.	Agg. Price.
6	32	Col. L. G. Morris,	$397.50
1	5	N. L. Chafee,	67.50
1	6	J. N. A. Griswold,	48.00
8	41	M. Earle, California,	1,326.00
5	9	Hon. A. B. Conger,	213.50
	93	sold—average $22.07—Total,	$2,052.50

SOUTH-DOWN RAMS AND RAM LAMBS.

2	10	John Cornell, West Farms,	$65.00
1	5	John Haven, New-York,	36.25
1	5	M. Earle, California,	51.25
3	3	J. N. A. Griswold,	42.00
1	1	David Beatty, New-York,	73.00
1	1	Thomas Swift, Highbridge,	19.00
1	1	H. L. Browning, Norwich, Ct.	25.00
1	1	T. A. Nevin, Monticello, N. Y.	160.00
2	2	Dr. Price, West Chester, Pa.,	36.60
1	1	L. Hasbrouck, Kingston,	23.00
1	1	D. B. Haight, Dover Plains,	25.00
1	1	Hon. A. B. Conger,	35.00
1	1	T. V. Sharp, Kingston,	18.00
	33	sold—average $18.44—Total,	$608.50

Of the South Down Ewes, four were imported and had been prize-takers at the Canterbury Royal in 1861, and at the New-York State Fair at Elmira the same autumn; they went to Hon. A. B. CONGER, two of them at $50 each, and the other two respectively at $40 and $21. Of the other ewes, the highest prices were brought by those bid off for a Mr. Earle of California—two pens at $41 per head, three pens at $34 per head, one pen at $26 per head, etc. Of the rams, *the* high price of the day was $160 for "lot 100," the two-year old ram which took the first prize at Utica in September, and which was bred by Mr. J. C. TAYLOR, Holmdel, N. J., and purchased from him by Mr. LORILLARD. It went to Sullivan county. The first prize yearling ram at Utica, went to Mr. Beatty of New York for $73. The next highest lot was an imported four year old which took the first prize at Elmira, 1861, and which now went to Waldberg at $35.

There were also sold a number of Short-Horn and other Cattle, partly belonging to LORILLARD SPENCER, Esq., as follows:

SHORT-HORN COWS.

Name.	Calved.	Purchaser.	Price.
Sonsie 13th,	Ap. 30, 1858,	T. A. Nevin,	$125.00
Sonsie 14th,	Mch. 23, 1859,	A. Bathgate, Morrisania,	50.00
Sonsie 15th,	Mch. 24, 1861,	John Cornell, West Farms,	50.00
Hopeful 2d,	June 15, 1859,	Hon. A. B. Conger,	50.00
Esterville 5th,	June 16, 1859,	J. N. A. Griswold,	75.00
Esterville 6th,	April 6, 1861,	A. Bathgate,	55.00
Esterville 7th,	Sept. 7, 1852,	do.	40.00
Jean 3d,	May. 9, 1859,	do.	165.00
Jean 2d,	June 19, 1858,	T. A. Nevin,	105.00
Phoebe 11th,	July 24, 1859,	A. Bathgate,	110.00
Phoebe 12th,	Feb. 26 1860,	M. Zabriskie,	45.00
Phoebe 13th,	May 5, 1861,	— Bradford,	39.00
Phoebe 14th,	July 1, 1862,	J. N. A. Griswold,	22.00
1 Heifer, no age or name,		A Bathgate,	80.00
1 do.	do.	do.	82.00
3 cows,	do.	G. W. Lewis, Providence,	$55 each, 165.00
1 cow.	do.	J. N. A. Griswold,	28.00
1 bull "Fordham," imp.		T. A. Nevin,	295.00

ALSO

1 Devon bull, 1 year old,	T. A. Nevin,	50.00
1 do. cow,	J. N. A. Griswold,	67.50
1 do. do.	do.	50.00
1 do. do.	J. H. Macy,	50.00

WOOL-GROWERS' ASSOCIATION IN ILLINOIS.—The Illinois State Fair, lately held at Decatur, Ill., was marked by a movement of some importance among the wool-growers of the State.

A meeting of gentlemen interested in sheep-raising was held on Thursday evening, at which Hon. GEORGE MINIER of La Salle county, was called upon to preside, and C. R. OVERMAN of McLean, was chosen Secretary. After a discussion on the subject of washing sheep, in which very diverse opinions were expressed, the necessity of a protective tariff was strongly urged by several speakers, as, also, the need for more efficient protection from dogs. Various plans were proposed to meet the latter requirement, among which were legislative enactments, Osage Orange hedges, and the use of a good gun. No definite conclusion was come to at that meeting, but a committee of seven was appointed to report on the subject at the next meeting—Hon. JOHN WENTWORTH, Chairman.

At the adjourned meeting, on Friday evening, the committee reported the following resolutions, which were unanimously adopted:

Resolved, That the Legislature of this State be requested to provide, by early enactments, greater protection against the depredations of dogs and wolves, by amply compensating from the county treasury for losses sustained from dogs, and by giving liberal bounties for the destruction of wolves. The Legislature can provide the means therefor by taxing or licensing dogs, or otherwise.

Resolved, That, as long as the revenues of the country are derived so largely from duties upon imports, as they now are, the same discrimination that is now made in levying those duties to protect the manufacturers of wool, should be extended to the growers of wool. If the argument is a good one, that this country should patronize its own manufactures, it is equally good that the great staples of those manufactures should be raised in our own country.

Resolved, That while we acknowledge our obligations to the press of the country generally, we deprecate the course of a few newspapers which quote from the New-York Economist and other organs of wool speculators and monopolists, and thus deceive many of their too-confiding readers into selling their wool below remunerative rates. No press can be true to the country that is false to its agricultural interests.

Resolved, That the wool growers of the United States have a common interest, and should have a common organization, to discover, expose and protect themselves from the various combinations of speculators and monopolists, who are not only continually decrying the price of wool, but are laboring to reduce the tariff upon the wool which we sell, whilst they wish to raise it upon the cloths which we buy.

Resolved, That we do now form ourselves into an association to be known as the "Wool Growers Association of the State of Illinois," and that we will elect a President and Secretary, who shall urge the organization of similar associations in every State in the Union, and shall correspond with the same.

On motion of Mr. Wentworth, a committee of seven was appointed to nominate a president and secretary of the Wool Growers' Association. They reported as their choice for President, A. B. MCCONNELL, and for Secretary, David A. Brown, both of Springfield, Sangamon county. Mr. McConnell, the President, is, we believe, one of the largest sheep raisers in Illinois—he and his brothers own-

ing something like 25,000 in number. Mr. Brown, Secretary, is also largely interested in the same direction, having something like 3,000 sheep to look after.

A gentleman present, who took a leading part in the proceedings, writes to the COUNTRY GENTLEMAN, that "it was the unanimous opinion of those assembled that 75 cents per pound is but a fair price for good washed wool. We intend to open a correspondence with all other State organizations, with a view to prevent our farmers being deceived by the organs of the wool speculators. We shall also demand such a re-adjustment of the tariff as will give us just as much protection as the manufacturer has."

WHEAT SHOW AT ROCHESTER.—It will be remembered that the Monroe Co. Ag. Society offered large prizes for seed wheat—the highest $150—open for competition to all. Twenty entries were made, including some from Maryland, Illinois, and Canada West. The prizes were awarded as follows:

Best twenty bushels White (blue stem) Winter Wheat. The committee were unable to decide, and accordingly divided the first premium between I. H. Anderson of Hamilton, C. W., and E. S. Hayward of Brighton, Monroe Co.,—$75 each.

The second premium on the above was awarded to Robert Embury of Penfield—$75.

Twenty bushels Red Winter Wheat—first premium awarded to E. H. Hebard of Canandaigua—$50.

There was no competition for the second premium.

Two bushels White Winter Wheat. First premium divided as before, between I. H. Anderson and E. S. Hayward—$50.

Second premium on same variety to Robert Embury of Penfield,—$25.

Two bushels Red Wheat. First premium to E. A. Hebard, Canandaigua—$40. Second premium to Harvey Jerrolds, Perinton,—$20.

After the above awards were made the premium wheat was sold at auction, at an average of $2.75 per bushel. The best twenty bushels of white (blue stem) winter wheat was purchased by JOHN JOHNSTON of Geneva, who was one of the judges.

☞ The Exhibition of the American Institute closed on the 25th, and is generally characterized as in all respects a success. The chief feature of the last week was the Horticultural display, including the finest show of Fruits, it is said, ever made in New-York. A collection from the widely known Nursery of ANDRE LEROY, Angers, France, embraced about 250 varieties of the pear, and 150 of the apple, and was the first contribution of the kind on record from Europe to an American exhibition. It is said that about 100 varieties more were originally included, but did not stand the voyage so as to be fit for the tables. Among American exhibitors were a number of our leading Nursery firms and amateurs—among them 137 varieties of pears from T. T. Lyon, Plymouth, Mich., 347 of pears, apples, and plums from Ellwanger & Barry, Rochester, 142 of pears from J. B. Wolfe, Esq., Throgs Neck, 50 of pears and 25 of apples from W. L. Ferris, Throgs Neck, 100 of pears from C. M. Hovey, Boston, and other valuable collections, from Frost & Co., Rochester, Charles Downing, Newburgh, D. W. Coit, Norwich, Ct., and numerous others.

☞ Mr. ROBT. RENNIE of Port Hope, C. W., writes to the Toronto Globe on the subject of "Seed Grains," asserting that varieties of wheat in Canada West require renewal by the importation of the seed at intervals from other localities. For example he says that "Fife wheat, on lands where it originally produced from 23 to 28 bush. per acre, under the same culture, now does well when it brings 14 to 17 bush., and it is feared it will soon reach the point of positive loss." He urges "not only individual but national exertion to provide suitable changes of seed before the deterioration becomes so serious as to be a heavy national loss," and would like it, if the Board of Agriculture would send "competent parties to the north and south of Europe, and the United States, to examine growing crops, and select from the standing grain at harvest such as they might think desirable for seed for Canada."

VERMONT SHEEP.—The sheep fever is raging, to a high degree, in Vermont. The papers of that State, for the last week, report sales as follows: Eli Thorp of Bridport, has sold a ram for $1,000, to John Sprague of Waltham. E. S. Stowell of Cornwall, a ram for $1,200, to D. J. Twitchell of Weybridge. Mr. Stowell has also sold his ram "Sweepstakes," to Twitchell, Boyce & Co. of Ohio, for $1,200, and he "has two ram lambs for which he has refused $3,000." M. G. Barber of East Hubbardton, sold a ram to Ships, Cotter & Co. of Ohio, for $600, for which they "refused $1,200 before he left the railroad depot." J. S. Benedict of Castleton, recently refused $1,000 for twelve sheep that might be selected from his flock. Mr. B.'s price was $1,200, and nothing less would procure them. Seneca Root of East Hubbardton, writes to the *Rutland Herald*, as follows:

"In a late number of the Herald you ask, "Who Beats?" and say you have been informed that M. M. Dikeman of this place, sold a buck lamb last fall, &c., that sheared 17¾ pounds of good clean wool. I am not one of the bragging kind, and shall content myself by stating facts, and submit to you, whether I beat or Mr. Dikeman. Two years ago I sold to T. J. Ketcham of Pittsford, a buck lamb that I raised, which was dropped in April. The next May he took from the lamb 20½ pounds of 'good clean wool.' I have a yearling April ewe, from which I took last June 14 pounds of *washed wool*. She was kept with the flock, and had no extra keeping in summer or winter."

SALE OF STOCK.—Mr. WENTWORTH of Chicago, purchased at the late Illinois State Fair, one-half of the celebrated imported bull King Alfred, (14760,) bred by Jonas Webb of Babraham, England. He was selected by James N. Brown in person, who has held him above all price until he sold one-half to Mr. W., on condition that neither is to use him upon other cows than his own, and neither is to ever part with his interest, and he is to be kept every other year upon the farm of each. His grandsire was the Duke of Gloster, (11382,) and he has several other crosses of the Duke blood.

RED ASTRACHAN APPLE.—A Massachusetts correspondent of the Genesee Farmer says, that by picking the Astrachan apples as soon as they get well colored, and placing them in a dry place, their propensity to rot is checked; they soon become mellow, and their acidity is so reduced that they are very agreeable in the hot season and never cloy the appetite.

THE OHIO STATE FAIR was held at Cleveland, Sept. 15–18. The exhibition was good, the attendance large, and the Fair, in every way, a decided success. The receipts were about $15,000—sufficient, says the Ohio Farmer, to pay all past indebtedness, premiums and expenses, and leave a handsome balance on hand.

☞ J. W. BAILEY, Esq., of Plattsburgh, sends us a sample of the Adirondac Grape, which came to hand in excellent order. In size and flavor, as well as in time of ripening, this variety is now an admitted acquisition; those who have had experience in its culture, so far as we are aware, are unanimous in its praise.

Inquiries and Answers.

DWARF PEARS.—There is much complaint of the dwafs pear not being durable. How would it do to bend the young tree in the form of a layer at the time of planting, to make the young tree root from the pear? Again, how will the Seckel pear do to make perry? I have quite a number of young trees, and if it would make a good article, the fruit might be used to advantage that way, as it is sometimes quite knotty. W. B. D. [Bending the pear tree would spoil itr shape; a more common way is to plant the trees deep when they are young, in order that the pear may throw out roots above the quince, which they will frequently do. These roots, however, being frequently one sided are apt to cause the tree to incline or tip over. This may be partly remedied by laying bare the prominent roots and bending them around in the form of a hoop. The best way however is figured and described on page 46 of vol. xx, of the Co. Gent. We know nothing of the manufacture of perry, but would prefer even knotty Seckel pears to all the perry that could ever be made.]

IS BUCKWHEAT EXHAUSTING?—You will confer a favor on one of your subscribers if you will state whether buckwheat is injurious to land or not, as some farmers, principally those that have lime-stone land, say that it impoverishes the land. J. M. S. *Eagle Foundry, Pa.* [Cultivators differ in opinion on this subject, and we have no distinct, well authenticated facts to settle the question conclusively.]

GAS LIME.—What is the value of refuse lime of gas works for manure, say at five cents per bushel? W. B. C. [Gas lime is of very uncertain value. In some places there is a constant demand for it, while in other localities farmers will not take it as a gift. It should never be used until after it has been for some months exposed to the air. After this exposure it should be thoroughly composted with three times its bulk of soil, and applied as a top-dressing to grass lands.]

SOWING FLAX SEED WITH BARLEY.—If not too great a tax on your space, I would like to get some information in regard to sowing flax seed with barley and other small grain. There was an article on this subject in the Co. Gent. last spring, but it was not so full as desirable. How much must be sowed to the acre; is it necessary to harrow it in, and how is the flax seed to be separated from the other grain? A reply to these inquiries would greatly oblige an old subscriber. M. B. G. [Will some of our correspondents who have had experience with this mode of management, please answer]

DWARF PEARS.—I wish to add this fall about 40 dwarf pears to my orchard. I already have a variety list. I now want to plant of the most desirable sorts for profit. Will you please make out a list for me? R. *Newark, O.* [The Louise Bonne of Jersey and Duchesse d'Angouleme are the two most profitable pears as dwarfs—the latter is sometimes unproductive at the West. Next to these may be named Beurre Diel, Glout Morceau, Vicar of Winkfield, Beurre d'Amalis, Easter Beurre, Buffum, Urbaniste, Anjou, Belle Lucrative, Nouveau Poiteau, Josephine de Malines.]

ERGOT.—Will some one tell me how to separate "smut rye" from rye, and what is ergot worth per pound? J. W. B. *Wilson, N. Y.* [The grains of ergot are so much larger than the healthy or unaffected grains, that they are easily separated by a sieve. We know nothing of the market value of ergot.]

LAYERING PARADISE AND QUINCE.—Please enlighten me upon the subject of layering the Paradise, Doucain and Quince stocks. Should they be laid full length in the trench, or planted and bent down, leaving a little of the stock next the root exposed for shoots for the next year's layering? M. G. *Washington, D. C.* [They should not be bent down, as that makes them crooked, but cut down, so as to sprout up thickly, and the earth then embanked around these shoots, the embankment broad enough to preserve moisture. These, when rooted, are separated and set out in rows till they form good plants.]

FOUL IN THE FOOT.—Can you or any of your subscribers tell me of a cure for my cows? I have had a good deal of hoof ail among my cows this summer, and have succeeded in curing the most of cases with the ordinary application of tarred rope; but I have now three cows that none of the common remedies seem to help. The disease enters the hoof quickly—that part of the leg immediately above the hoof becomes considerably swollen, and soon cracks open, discharges matter, and the animals are so lame that they will not willingly move about. One of the three I have turned off as incurable; she will lose one hoof, and I greatly fear I shall have to do the same with the others. I have used muriatic acid, butter of antimony, vitriol, copperas, lime and tar, and don't think that any of the above have done the least good to the three cows spoken of. If you can give me any information in regard to the cure of such cases, you will much oblige A Subscriber. *Newton, N. J.* [Can any of our correspondents furnish a remedy for virulent cases as above, which do not yield to any ordinary treatment? Dadd recommends tincture of matico, 2 oz., pyroligneous acid 1 pt., glycerine 4 oz.; these ingredients are to be mixed together, and a sponge saturated with the mixture placed between the cleft of the hoof, and it may be kept there by a bandage. Bathe the hoof and adjacent parts with the same mixture. Doubtless pulverized charcoal would be a useful ingredient in poultices for this disease, and a solution of chloride of lime form a good occasional wash.]

DISTANCES OF QUINCE TREES.—I wish to ask for information on the following: I planted some 6 years ago, 25 Quince trees, and as I saw the distance in Thomas' Fruit Culturist from 6 to 8 feet, I planted mine 10 feet apart. The ground was trenched with the spade 2 spits deep—a rich black soil that depth. They have been bearing for two years, and the branches are now so close together, that I cannot cultivate them with the plow or cultivator, and it is too expensive to do it with the spade; consequently the surface has become a sod; and as I am going to put out 200 more this fall, the ground to be subsoiled to the depth of 20 inches, what distance should they be apart so as I can cultivate with plow, cultivator and harrow? Would it be advisable to remove every other row of those already planted, that is, so that they would stand 10 by 20 feet apart? I think I could do it without checking them much, by digging a trench around them before frost, 2½ feet from the tree, filling it with straw, and when the ground is frozen removing them with a ball of earth attached and setting them in new holes. John Porter. *Pittsburgh, Pa.* [The quince trees in this instance appear to have grown with great vigor, and to have attained unusually large size. We think that distances formerly given for fruit trees are generally too small. It has been found that the roots extend farther than was once supposed; and, although the branches may be far from meeting, it is desirable to give room enough in the soil for their free extension, without meeting each other or exhausting its fertility. Every alternate row in the above instance might be removed, as proposed. It would be well to take that opportunity for thinning in the trees by pruning, in order that their growth might be as little checked as possible.]

MARKET GARDENING.—I am a city gentleman, just about moving to the country to go into "market gardening," and would like to know the best book I can get on the subject. I have several books, but they all seem to think that the reader is a tolerably fair gardener to begin on. I want one for a *real beginner*. If you know of such a work, it might make a suitable item in your column of "inquiries and answers." J. W. F. *Nashville, Tenn.* [Buist's Kitchen Gardener, price 85 cents, post-paid, is the best work we know of, for your purpose.]

REMOVING WHITEWASH FROM AN OLD WALL.—I am very anxious to know how I can remove whitewash from a brick wall, so that ivy will cling to it. The whitewash is so old and hard that it cannot be scraped off. Is there any acid that will take it off? P. S. C. *Cecil Co., Md.* [We know of no easy and good remedy.]

TOBACCO.—An answer to the following will much oblige myself, and I doubt not many others. C. *Cecil Co., Md.*

"CONNECTICUT TOBACCO.—We should like to have some one explain the difference between the Kentucky and Connecticut tobacco—showing the reason why the latter should be worth, (as it generally is in New-York,) more than double the price of the former." Mr. LEWIS in "THE CULTIVATOR" for April, 1847.

PIGS, &c.—I would like to make inquiry through the columns of your paper, if any one in Western New-York, breeds for sale the Chester County or Berkshire pigs? If so, I would respectfully suggest to them the propriety of advertising in some good reliable agricultural paper, like the Co. GENT. Such a course might perhaps prove a mutual benefit. Also let me ask your readers if any of them are posted, as to where a thorough shepherd's dog might be had? W. H B. *Jamestown, N. Y.*

BROOM CORN.—Will you have the goodness to solici some correspondent to write an article on the cultivation, curing and value of broom corn. Your pages are rich with most valuable information on nearly every agricultural subject save this one. What I, and I presume other readers need, is to be informed *minutely* of the entire modus operandi of the whole thing, from the planting of the seed to the marketing of the proceeds.

Marshall, Mich. O. C. COMSTOCK.

CIDER VINEGAR.—I wish some of your readers would give me the modus operandi of having cider turn to vinegar by next summer. Ought it to be watered, or will it make vinegar if left pure? Also how to manage the pomace soakings, and how long ought pomace to stand before it is pressed? Also, ought the vinegar or cider to be racked off this fall after I am done pressing? W. B. C.

☞ Of the "State Fairs" of Pennsylvania, Indiana and Illinois, we have accounts in our exchanges,—all of them more or less affected by the influences which tend to prevent a large turn-out of exhibitors the present season, owing to scarcity of labor and other reasons—but all of them characterized by a good attendance of people.

Mr. Solon Robinson says of the Pennsylvania State Ag. Society's Show at Norristown, Sept. 29 to Oct. 3, that the display of agricultural implements was a very good one. "In this department the show of a large number of grain drilling machines, indicates the disposition of Pennsylvania farmers toward this great improvement in putting in grain. Although many thought Pennock's drill was almost perfect, twenty years ago, we find that every year witnesses some little improvement, and it appears to me that farmers gather around these machines and listen to the remarks of the exhibitors with just as much earnestness as they did with the first ever made public." The show of fruit and flowers appears to have been fair, and that of vegetables—a department often too much neglected—a good one. Some very good samples of grain were exhibited. The dairy department scarcely had an existence. The display of live stock included some very good animals, but could not be considered as approximating a fit representation of the improved stock of the State.

Of the Indiana State Ag. Society's Show, at Indianapolis the same week, the Secretary, Mr. Loomis, states that it "was a success, far exceeding the expectations of our most sanguine friends." In the live stock and mechanical departments the exhibition was "rather light, compared with former years, although fully four times as good as last year. Our show of sheep of the different grades has never been equalled in any former year," and in fruits and flowers the display was also unprecedentedly good.

Of the Illinois State Ag. Society's Show, at Decatur, on the same days, the Prairie Farmer reports the show of cattle very superior as to quality, and fair in numbers. "The Short-Horns, of course were most numerous, as they also are in the State, either from real superiority of the race, or from the perseverance and enterprise of the breeders. The show of Devons was light, far below previous exhibitions, both in number and quality." The show of horses was the largest and best on record, and the swine were in good numbers and quality. There was a good turn out of sheep in the different classes of French and Spanish Merinos, South-Downs, Long Wools and grades. The variety of implements and machines shown was not as large as sometimes, but the assortment of those for special uses was very large, particularly in harvesting machines, wheel cultivators, corn planters and gang plows. The exhibition of fruit was creditable, F. K. Phoenix of Bloomington, being one of the leading competitors.

PRICES OF AGRICULTURAL PRODUCTS AT THE WEST.—The Prairie Farmer notes the contrast between the prices of all the Western farmer raises for sale, at this time, as compared with those of two years ago—the first winter of the war. The following are the Chicago quotations at the dates affixed:

	Oct. 17, 1861.	Oct. 15, 1863.
Flour—Choice S. Extra,	$3.60@4.20	$5.00@6.25
Wheat—No. 1 Spring,	75c@75½c.	1.09@ 111
Corn—Canal mixed in store,	22c.	78@80c.
Oats—in Store,	17c.	58@60½c.
Rye,	30@31c.	98@99c.
Potatoes,	40@50c.	60@65c.
Beans,	1.30@1.50	2 70@2.75
Flax Seed,	99c.	2.60@3.00
Timothy,	1.75@1.40	2.10@2.25
Broom Corn, (Sept. 9.)	50.00@75.00	145.@150.00
Wool, (Oct. 3,)	25@30c.	55@58c.

AMERICAN STRAWBERRIES IN ENGLAND.—The *Gardener's Chronicle*, London, gives an account of the Strawberry plantation of the late Mr. Nicholson at Yarm, where over 400 varieties, collected from all parts of Europe and from this country, are under cultivation. Of American varieties the writer speaks as follows:—"Many kinds have been sent from America, and are grown here, but, with two or three exceptions, cannot be regarded as fine strawberries, almost all being deficient in flavour. One of the best is Boston Pine, a free cropping variety, of medium size, useful for preserving and very early. Wilson's Albany, however, is the best as seen here; a good sized, handsome, round fruit, of a dark red color throughout; an excellent preserving sort."

BIG CROP OF ONIONS.—The editor of the Massachusetts Plowman has been down among the Marblehead farmers. Among other things he made a note of, is a statement in regard to the onion crop of Horace Ware, jr., which is estimated the present season at *seven thousand bushels!* They are grown upon fourteen acres. He raised a large crop last year, but unlike his neighbors he did not sell them until spring, and thereby saved in the difference of price, the snug little sum of *two thousand dollars!*

☞ We learn that Mr. JURIAN WINNE of Bethlehem, has sold his fine Leicester ram, which received the first prize in his class at the Utica State Fair, and a portrait of which was published in this paper of Aug. 27, to Mr. GEO. A. EXTON of High Bridge, Hunterdon Co., N. J.

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TRUE DELAWARES,
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Also DOWNING'S EVERBEARING MULBERRY, STRAWBERRIES; RASPBERRIES, CURRANTS, &c. Send stamp for Descriptive Catalogue to GEO. W. CAMPBELL,
Oct. 8—w4tm1t. Delaware, Ohio.

NEW PHILADELPHIA RASPBERRY.—After the 10th of 10th month (October) we shall have ready for sale and shipment, genuine, well rooted plants of the above, by the dozen or hundred.

From its great hardiness, extraordinary productiveness and fine flavor, it promises to be the leading Raspberry for market or private gardeners. Price, $2.50 per dozen, $15 per 100.

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Agricultural and Seed Warehouse,
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APPLE STOCKS.—100,000 Apple Stocks for Sale—first quality—suitable for root grafting.
H. E. HOOKER & CO.,
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Catalogues may be had of our Agent, R. H. Williams, 121 Waverly Place, N. Y., or directly from us. J. F. DELIOT & CO.,
Sept. 24—w9t. Vine Growers, Sing Sing, N. Y.

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It has been fully tested and proved to have those important requisites of a first rate market and table fruit. 1st. Extreme earliness being the first in appearance in our market. 2d. Large size. 3d. A very free grower. 4th. Great productiveness, being a hermaphrodite variety. 5th. Fine quality. 6th. Attractive appearance.

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All Varieties Worthy of Cultivation,

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Also two pure bred BERKSHIRE BOARS, very fine and large, one four and the other five months old. Price, $15 each. Full pedigrees furnished of the above stock. Address
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HATH ACHIEVED!
THOUSANDS ARE TESTIFYING TO ITS EFFICACY.

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AFTER years of study and experiment by the inventor, to compound from PURE VEGETABLE MATERIALS a Powder that SHOULD and MUST take the place of the thousand and one nostrums gotten up and palmed upon the public as "CERTAIN REMEDIES" for the cure of al diseases which the brute creation are "heir to," he has produced the one heading this advertisement, and none CAN BE GENUINE unless bearing our FAC SIMILE signature. The demand has been such that its sale has been chiefly confined to the State of Pennsylvania, but we have now consummated such arrangements that we are prepared to supply the numerous orders now on hand, as well as those we may hereafter receive from other States of the Union.

Knowing this powder to possess all the curative properties here set forth, we deem a fulsome tirade of words unnecessary, feeling assured that its OWN MERITS will secure for it a ready sale. Being composed of pure vegetable ingredients, it can be safely and judiciously given to that noble animal the HORSE. Its effects are no FALSE PAMPERING of the system, creating a bloated carcass with a premature shedding of the hair; but on the other hand, it strengthens the digestion, purifies the blood, regulates the urinary organs, thereby improving and protecting the whole PHYSICAL condition of the animal even when in an apparently healthy state.

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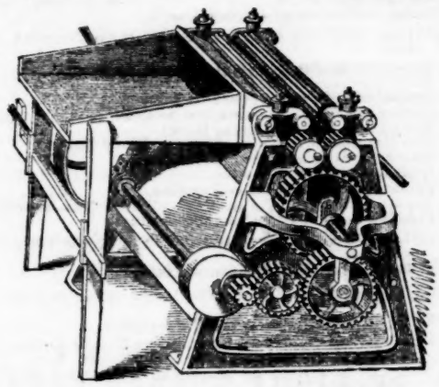

MALTA, SARATOGA CO., N. Y., Aug. 10, 1863.

MESSRS. MALLORY & SANFORD:

Gentlemen—On the 19th day of March we drew to the mill of N. G. Akin, thirty-nine hundred and thirty (3930) pounds of flax straw, which he dressed through the old Brake, and we received four hundred and eighty-one (481) pounds dressed flax.

We about the first of June, drew to the mill of Wm. H. Buckley forty-four hundred and ten (4410) pounds of flax straw, which was dressed through one of your Patent Flax Brakes; we received eight hundred and five (805) pounds of dressed flax.

The flax was grown on the same piece of land, and there was no perceptible difference in the quality of the flax, except that the portion drawn to Akin's mill was rotted in the fall of 1862, and that drawn to Mr. Buckley's mill was spring rotted, which is considered not so good, from the fact that it loses part of the oily matter from the fibre, and does not yield as much per ton of straw as the fall rotted.

You will perceive by the above statement that we received from Mr. Akin's mill 245 pounds nearly of dressed flax per ton of straw, and from Mr. Buckley's mill 365 pounds of dressed flax per ton, which makes a difference of 120 pounds per ton in favor of your Brake.

We are recommending our neighbors to take their flax to one of your Brakes to have it dressed, although it is 15 miles to the nearest one at present.

J. B. WEEKS,
L. L. WEEKS.

I certify that the above statement is correct, as I saw the weighers' receipts for both lots of straw, and weighed the dressed flax myself that was dressed at my mill. The flax dressed at Mr. Akin's mill is correct, no doubt, as the above gentlemen are perfectly reliable.

Aug, 27—weow2tm3t. WM. H. BUCKLEY.

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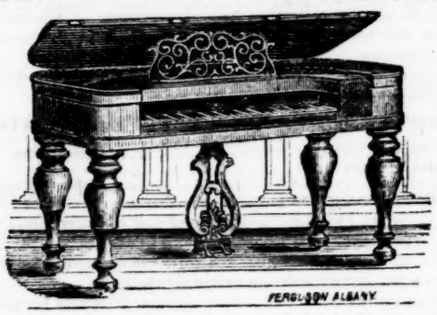

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1864 THE ILLUSTRATED 1864 ANNUAL REGISTER OF RURAL AFFAIRS.

NO. X---FOR 1864.

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Its contents embrace, as usual, a large variety—including Agriculture and Rural Economy at large, Horticulture, The Dairy, Domestic Economy, etc.

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Beside the usual Calendar pages, presenting calculations for the three different parallels of the New-England, the Middle and the Border States, the following synopsis will partially show the chief subjects treated and the ground covered in the "ANNUAL REGISTER for 1864."

I. FARM DUTIES PERFORMED IN SEASON—FIFTY-SIX ENGRAVINGS.
1. Work for January—including plans of Ice Houses and Mode of Filling them, etc., etc.
2. Work for February—Manure Management.
3. Work for March—Preparing for Seed Time.
4. Work for April—Fences, Grass Lands, Plowing, etc.
5. Work for May—Indian Corn, Roots, etc.
6. Work for June—Corn Fodder, Orchard, &c.
7. Work for July—the Hay and Grain Harvest, etc.
8. Work for August—Weeds, Straw Stacks, Draining, etc.
9. Work for September—Winter Wheat, Cutting up Corn, Laying Stone Wall, &c.
10. Work for October—Husking—Potatoes—Winter Apples.
11. Work for November—Fattening Animals—Fall Plowing, &c.
12. Work for December—Feeding and Care of Stock—General Suggestions, &c.

II.—ROAD MAKING—TEN ENGRAVINGS.
1. Good vs. Bad Roads.
2. Friction of Vehicles.
3. Draining Roads and Road Scrapers.
4. McAdamizing.
5. Laying out Roads.

III.—MANAGEMENT OF SWINE—FIVE ENGRAVINGS.
1. Introductory Hints.
2. Pig Houses.
3. Breeds and Breeding.
4. Feeding and Fattening.

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1. Self-Acting Sled Brake.
2. Cattle Ties and Stanchions.
3. Movable Fences.
4. Jack Screws.
5. Draining Tools.
6. Brake Puller—the Hand Cart—the Dirt Scraper.
7. Farm Gates—Flat and Lapped Furrows.
8. The Kelsey Harrow.
9. Geddes' Wool Press.
10. Hand Cultivator for Garden Use.

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1. Cheese Factories Here and Abroad.
2. Their Management in Central New-York.
3. Arrival of Milk and Apparatus Employed.
4. Setting the Curd—Cooking and Salting.
5. The Cheese House—Curing Racks.
6. The Manufacture of Swiss Cheese—Whey Butter.
7. Quality of Milk at Different Seasons.
8. Quality and Cost of Cheese.
9. Private Dairies and Dairy Farming.
10. Manures—Stables—Forage Corn—Winter Management.
11. Cooking Feed at Utica Lunatic Asylum.

VI.—COLLECTING AND PRESERVING INSECTS—NINE ENGRAVINGS.
1. Collecting Insects—Apparatus Required.
2. Methods of Preserving them.
3. Study of Entomology.

VII.—FRUIT CULTURE—THREE ENGRAVINGS
1. Peaches, Apricots and Nectarines in Pots or Boxes—written for the ANNUAL REGISTER by P. BARRY, Esq.
2. New Pears—written for the ANNUAL REGISTER by CHARLES DOWNING, Esq.
3. Cultivation of Orchards—Currant Worm.
4. Dwarf Pears Changed to Standards—Small Fruits.
5. Fruit for the Army—Improved Culture—Watering, &c.
6. Peaches for Market—Good versus Bad Fruit.
7. Planting Dwarf Trees—Vineyards too Fertile.
8. Pears at Boston and Newburgh—Old Apple Orchards—Apples for the West—Grafting, &c.
9. Select List of Small Fruits—Winter Apples for Family Use—to Prolong Flowering.

VIII.—DOMESTIC ECONOMY—SIX ENGRAVINGS.
1. Canning Fresh Fruits—Particular Directions, including the whole process and necessary apparatus.
2. Wash for Barns—A House for Drying Fruit.
3. Curing Hams—Potato Yeast and Yeast Cakes.

IX.—RURAL ECONOMY.
1. The Philosophy of Painting—Materials—Oil—Lacker—White Paint.
2. Lead Color, Blue, Green, and Red—Paint Brushes, etc.
3. Plaster of Paris Paint—Tar Paint—Shellac Varnish—Benzole.
4. Prepared Glue for Wood and Leather—Oil and Varnish for Harness, etc.
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